

The New York
Academy of Medicine



By Exchange

ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF

The Illinois State Medical Society

PUBLISHED AT OAK PARK, ILL.

CHARLES J. WHALEN, M.D., Editor

HENRY G. OHLS, M.D., Managing Editor



INDEX TO VOLUME 73

JANUARY TO JUNE, 1938

NEW YORK ACADEMY
OF MEDICINE

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INDEX TO VOLUME 73

JANUARY TO JUNE, 1938

This is an alphabetical index of articles and discussions arranged by leading words. It contains occasional cross references. Names of authors and men who discussed the papers are also included. Details of society proceedings, including the titles

of papers read, officers elected, etc., can be located in proceedings under Societies, Editorials, News of the State, Marriages, Deaths.

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Illinois Medical Journal

OWNED AND PUBLISHED BY THE MEDICAL PROFESSION OF ILLINOIS
Office of Publication 715 Lake Street, Oak Park, Illinois

Vol. 73, NO. 1

OAK PARK, ILL., JANUARY, 1938 ^{45¢} \$3.00 a Year

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Entered as Second-class Matter July 21, 1919, at the Post Office, Oak Park, Illinois, under the Act of March 8, 1879. Acceptance for mailing at special rate of postage provided for in Section 1102, Act of October 8, 1917, authorized July 15, 1918. "The Advertising Pages have a Service Value for the READER that no truly Progressive Physician can afford to overlook."

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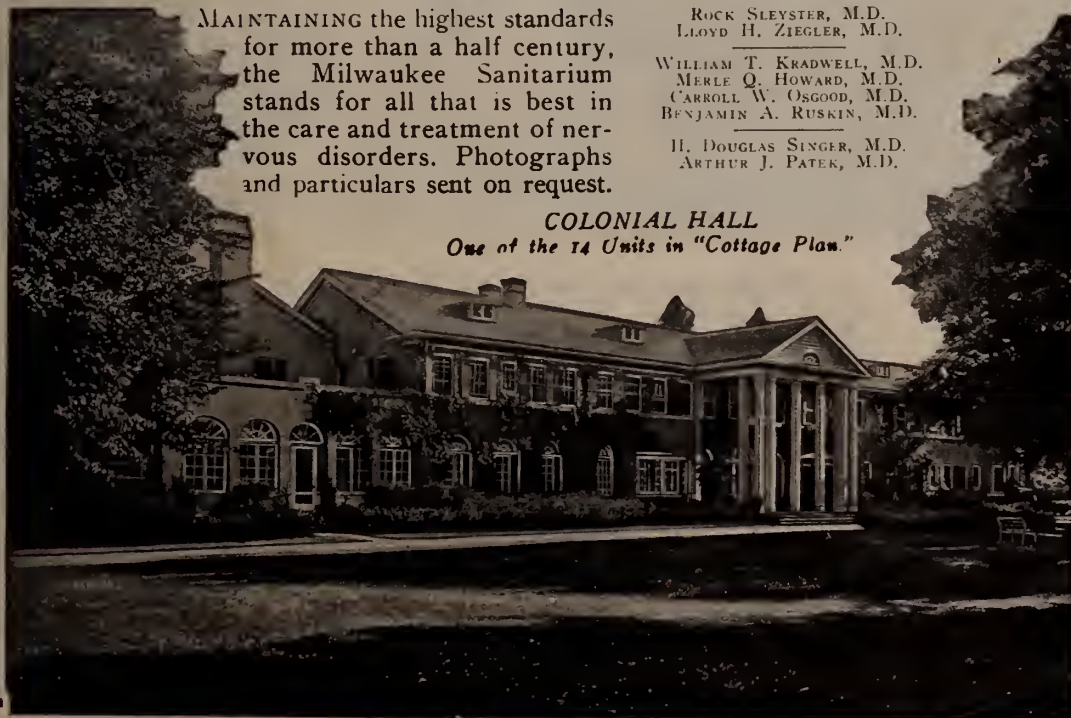
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● Apparently mild vitamin B₁ deficiency in humans is not characterized by very definite or entirely specific symptoms. While such a condition may be attended by anorexia, hypotonicity of the bowel, indigestion, vague pains and malaise, latent avitaminosis B₁ hardly presents a picture which is favorable to its early clinical detection. However, there are two procedures which may be employed when this type of avitaminosis is suspected.

The first procedure (1a) depends upon the nature of the response to administration of pure vitamin B₁. The second procedure, which has been more widely applied, makes use of the Cowgill formula for calculation of vitamin B₁ requirement. By consideration of the actual vitamin B₁ intake and the calculated vitamin B₁ requirement in any specific instance, the probability of mild avitaminosis B₁ may be evaluated (1b).

It is difficult to estimate the frequency of mild vitamin B₁ deficiencies in the United States. However, until such information is at hand, it is not illogical to suggest that latent avitaminosis B₁ must be regarded as an active possibility in some cases which may come to the attention of the medical practitioner. Fortunately, several factors

are operative which give assurance that eventually the incidence of latent avitaminosis B₁ will be reduced to a minimum.

First, those concerned with human nutrition have today more definite information concerning quantitative human vitamin requirements than ever before in history (2).

Second, every passing year brings marked progress in education of the layman to the necessity of a completely "protective" diet. The control of the latent avitaminoses is, in large part, dependent upon proper food selection and correct formulation of the diet by the layman consumer.

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1a. 1935. J. Am. Med. Assn. 105, 1580.
b. 1934. The Vitamin B Requirement of Man, G. R. Cowgill, The Yale University Press, New Haven.

2. 1937. J. Am. Diet. Assn. 13, 195.

3. 1936. J. Nutrition 11, 383.
1934. Ibid. 8, 449.
1932. Ibid. 5, 307.
1932. Ind. Eng. Chem. 24, 457

This is the thirty-second in a series of monthly articles, which will summarize, for your convenience, the conclusions about canned foods which authorities in nutritional research have reached. We want to make this series valuable to you, and so we ask your help. Will you tell us on a post card addressed to the American Can Company, New York, N. Y., what phases of canned foods knowledge are of greatest interest to you? Your suggestions will determine the subject matter of future articles.



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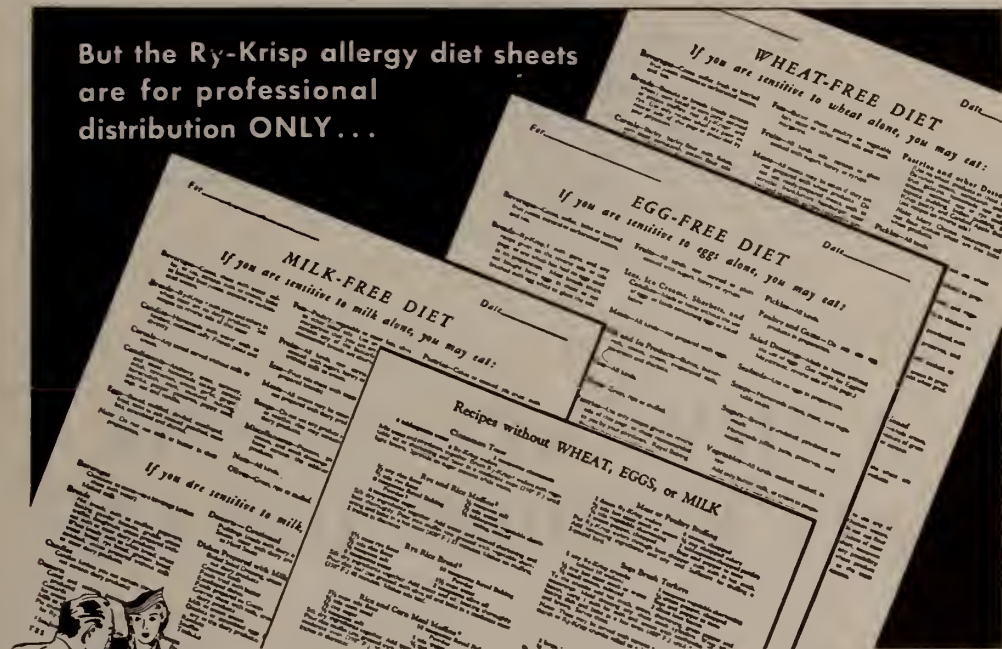
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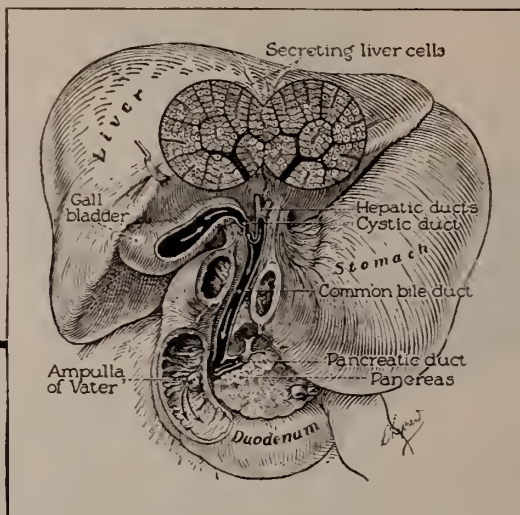
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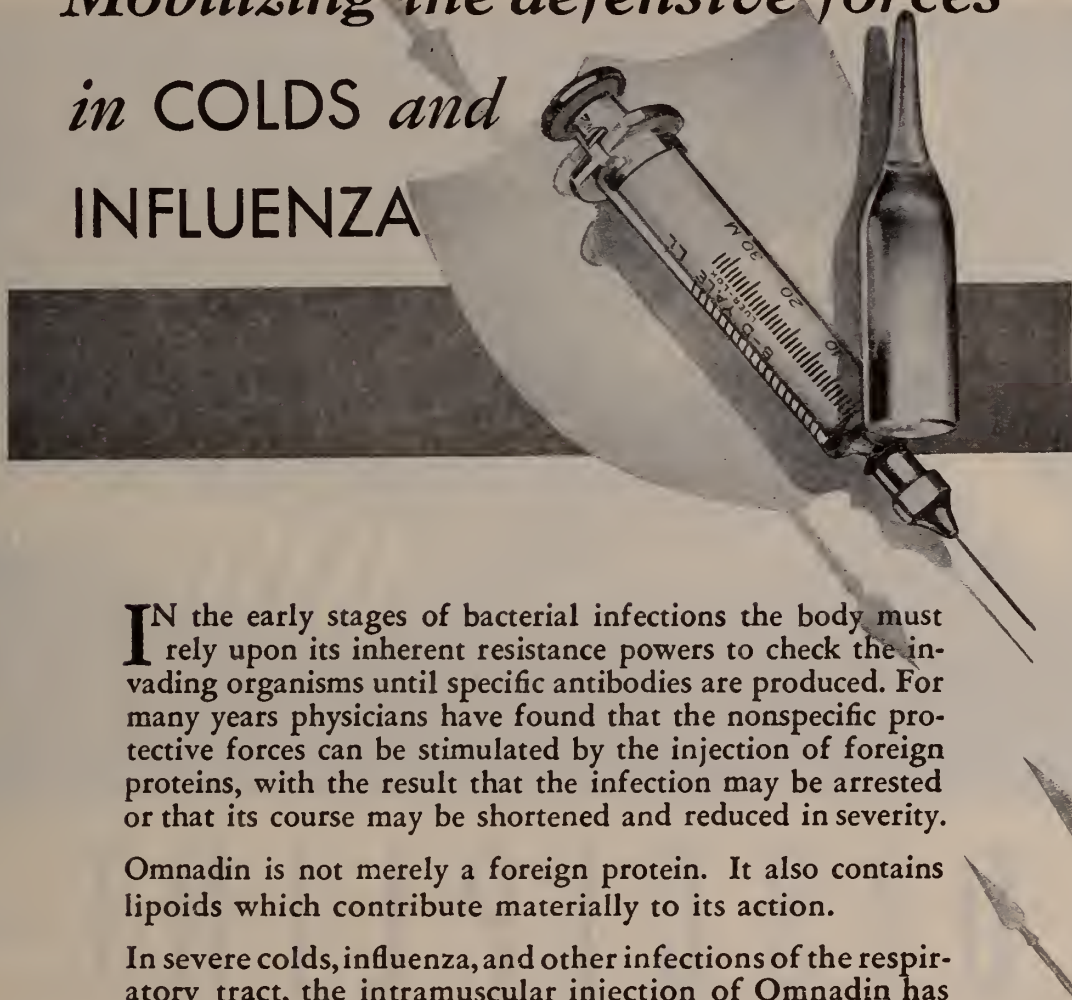
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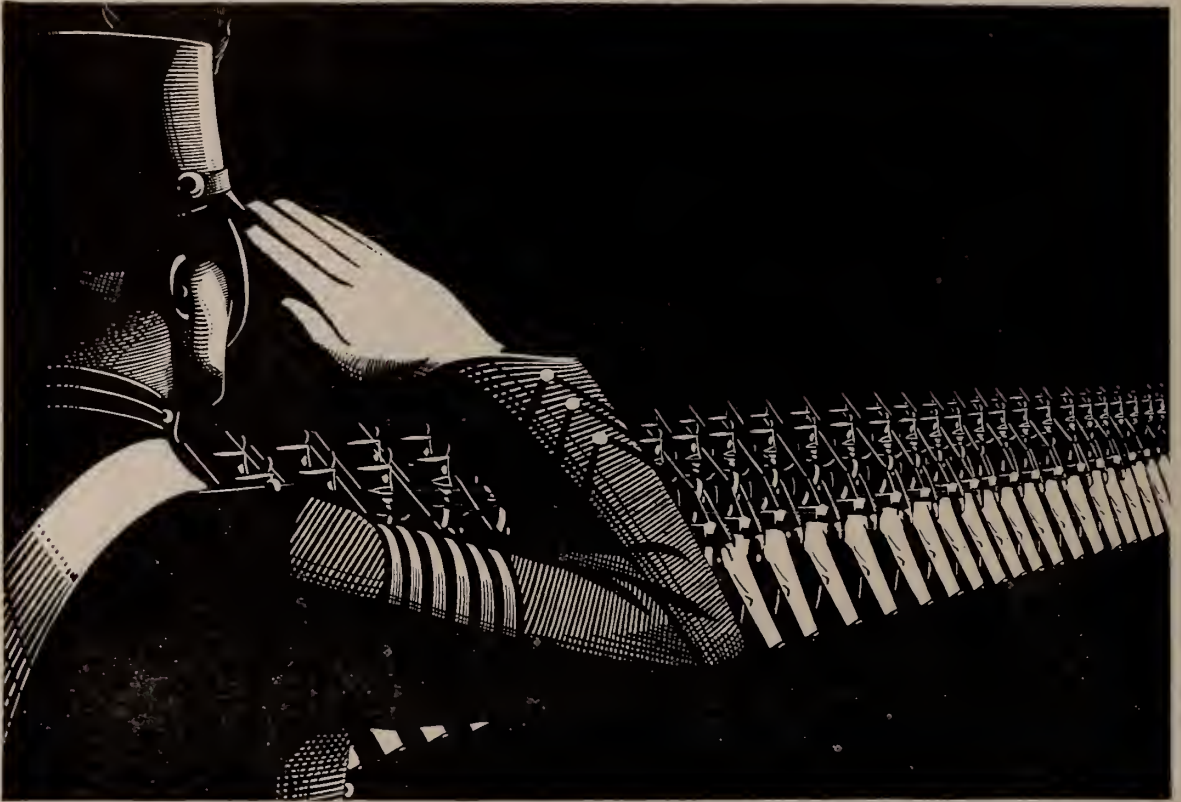
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VOL. 73

OAK PARK, ILL., JANUARY, 1938

No. 1

ILLINOIS MEDICAL JOURNAL

Published monthly by the Illinois State Medical Society under the direction of the Publication Committee of the Council.

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Editorials

HAPPY NEW YEAR, 1938!

For the medical profession in 1938 the New Year will be felicitous if attention is paid to the ancient Attic adage:

"Ton ponon poolousin amin panta tagatha theoi" . . . or "The gods sell us all good things for hard work."

The words came from the lips of Epicharmus. They might have been an adjuration to future disciples from Hippocrates or Aesculapius. "A Happy New Year" will be impossible to the medical profession throughout the span of time ahead and (unless one of the most arduous tasks in history is assumed concentratedly by doctors all over the land) the medical profession will find itself the most cheaply subsidized cog in the whole vicious communistic machine now being set up in the United States.

One of the products of this machine is to be, Heaven help us!—a political puppet physician. But since "Self-help is God's help," the medical profession should assume a definite awareness of individual effort for salvation. Immediate action as well as definite awareness is demanded. All over the United States, with this incoming year, are assembling those bodies of men who have been elected by taxpayers all over the country to dictate the ways of government, the paths of citizenship, and the collection and the subsequent spending of the tiethes. For such tasks these electorals receive salaries and perquisites from the taxpayers who have set them in office. They are there to serve rather than destroy the men who have placed them in power, and to serve, *not* to destroy, the commonwealth. This statement would seem to be one of the commonplaces of morality and ethics.

Unfortunately, communistic action works with small respect for morals, ethics, or that unit of the commonplace ordinarily called common sense. Communism and communistic practices are divided between abstract theory and concrete destruction. Whatever is and has been must be

wrong. The great god of Everlasting Upset and Eternal Chaos is the communistic deity in chief.

For centuries the medical profession has been faithfully, sacrificingly and with increasing competency serving mankind as ably as it could. No other band of men, outside of the group wearing the ecclesiastical mantle, has attained such extensive personal and professional philanthropies. In primitive times, and even still in primitive races, the "medicine man" is regarded with respect, with reverence and with awe. For is not his the skill that bridges the chasm between life and death? In earlier civilizations the practice of medicine was restricted to the priests in the temple. There may have been—there probably was—politics in the priesthood. But be it said for those oriental servants of the temple, they managed to drive the powers of politics, rather than to be driven by them. And in that respect, if in none other, modern medicine has regressed rather than progressed.

For, at the inception of 1938, what does the medical profession face, here in the United States?

First of all, the appalling specter of lay bureaucratic control, politically inspired, adjudicated and dominating, bids fair to transmute itself into an inescapable tyrant of more brawn than brain. In July a bill was introduced into the United States Senate, so craftily constructed, so varied of interpretation in its seemingly innocent clauses that it may well be construed as the finest example of a "wooden horse" socialistic traitors have succeeded in introducing into the life of the American people. With this bill in effect, with the medical profession *federalized at the expense of the taxpayer*, and absolutely at the mercy of the political boss, the death of medicine as an able science and the death of Americanism as a nation, and the slow death of the people from an eventually scientifically depreciated medical service requires no gifted imagination to foresee. Added to the direness of such a bill is the catapult which will set it in action and which is being gradually erected from boundary to boundary,—the federalized units of state medicine or compulsory health insurance developing in various civilian "groups," supported indirectly, or even directly, by whole or partial taxation and of which the most arrogant first saw the light among government employes in Washington, D. C. Considering that all of these em-

ployes are directly supported by the great American taxpayer, it demands no second sight to behold in that taxpayer an individual degenerating rapidly into an oafish esne!

The question may be propounded:

"What has all this to do with the medical profession? Or with the individual physician?"

The answer is that the medical profession, like the federal funds, is composed of a group of taxpayers. The medical profession is the lamb led most avidly to the slaughter. For by this communistic theory of compulsory health insurance, lay dictated and bureaucratically controlled and tax supported state medicine, both the physician and the general public, from the standpoint of health and welfare, are literally taken in three ways—going and coming and straight in the middle!

Since this is a political war against science, decency and true Americanism, and contingently an offense against the health of the world,—since American vital statistics prove us the healthiest and best cared for nation from a medical standpoint—the weapons that must be used are political ones. There is but one effective weapon in politics. *That weapon is the ballot.* Physicians who have held themselves too pure or too professional to concern themselves with what goes on at the primaries and the polls find themselves finally confronted with the necessity for action that has been preached and repreached in these columns practically pereunially for the last three decades. That is that the rights of medicine, the prerogatives of medicine, the sacred duties of medicine are right at this moment in legislative halls from Washington to the lowest hamlet being perverted into a political mop-rag . . . a mop-rag for which the medical profession and the people themselves are paying through the nose.

Yes, for increased taxes must be levied to meet the expense of paying for the bureaucratic red tape with which medical efficiency will be slowly but surely suffocated.

The task that is up to every doctor in the land is to pull the fat out of the fire insofar as he can. It is a personal and an individual duty. It is said that physicians have been so negligent as to let the wool be pulled over their eyes when candidates for every office were up for election. Since that was done, however, the work at hand is to focus on these legislative bodies now in session. STOP THE LEGISLATIVE CRIMES

BEFORE THEY ARE PLACED ON THE STATUTE BOOKS. MAKE LEGISLATORS FROM WASHINGTON TO PODUNK REALIZE THAT THEY CAN NO LONGER DECEIVE THE MEDICAL PROFESSION WITH PSEUDO-PHILANTHROPIC BUNK AND THAT BONSWOGGLING BUNK KNOWN AS "FEDERAL AID," WHICH IS ONLY A ROBIN HOOD METHOD THAT DOES *NOT* GO AROUND ROBIN HOOD'S BARN WHEN IT COMES TO MAKING THE SACRED PROFESSION AND SCIENCE OF MEDICINE A CHEAP, POLITICAL PROSTITUTE AND MEDICAL MEN POLITICAL PUPPET PHYSICIANS.

Month by month in these editorial columns your editor has cited facts and figures revealing the fallacy of engrafting the diseased economics of Europe upon our own comparatively healthy and at least youthful nation. All this dither about compulsory health insurance was the Bismarckian pill prescribed by the Old Chancellor of Blood and Iron to palliate an economic infection derived from imperial oppression and super-imperial taxation when European royalty was glimpsing its "Gotterdammerung" or "Twilight of the Gods." The most of them have since then passed to their more or less pleasant "Valhalla," or, if they have not, are probably wishing that they might have done so, long before the debacle. If such palliative measures did not cure the conditions for which they were prescribed, then how in the name of science or common sense can the same prescription be expected to cure a disease that does not exist in any other nation? The reply to this is that such an eventuation is to be expected only in the name of political chicanery—politics at its worst.

The American Medical Association has been quick to admit that some of the mechanics of the practice of medicine need revision, because the American Medical Association, being what it is and exactly what the title signifies, is an organization eager to look facts in the face, as is the way with medical men. *Facts first, theory afterwards.* That is the tacit slogan of medicine. In truth, it may be said that *facts* are a medical passion. And the facts in the case in the eyes of the group of American medical men—the group that knows more than anyone else the truth about medical economics, the need, the use and the abuse of so-called "medical charity," the

group that pays of its own flesh and blood and bone for the success of medicine as a healing art,—that group is definitely against the federally subsidized, the lay-dictated, politically controlled, tax-supported, bureaucratically dominated practice of medicine in the United States now being hatched in Washington. Ask any delegate to the June, 1937, session of the A. M. A. in Atlantic City, N. J., as to his idea of the "wooden horse" fetched to the convention by the Senator from Illinois!

In the name of America, in the name of Medicine, in the name of Humanity, immediate action is demanded. Get busy, Doctor! Get busy now! Begin with your alderman and keep on going! Don't stop until you reach your representatives and your senators down in Washington, D. C. Educate them. Explain to them. Let them know what they are doing. Like the man in the traditional early American story, try a little "moral suasion." But all the while you are trying this, let 'em know, Doctor, let 'em know that in your good right hand you have the one and only weapon of which the boldest, the lowest, the cheapest politician in the cheapest sense of the word is more afraid than he is of "man, God, or the devil,—and that is the great American ballot box—the vote at the polls.

Do something about this. Do it today. Do it with the same spirit that you tear off the last leaf on the calendar for 1937. Enforce upon cheap politics the knowledge that the profession of medicine will live up to its tenets, its ethics and its oath and thus preserve for posterity that spirit of service and that degree of scientific efficiency through which medicine has emerged through the centuries as an almost supernatural savior of mankind. There is nothing that brings surer happiness to the human heart than the knowledge of duty well done. When medicine is rescued from the maw of politics, then, and then only, can the physicians of the nation feel that they have before them that encouragement which will make for a "Happy New Year."

The tenor of this message is analagous to every message that has been sent you for some years past. This has had to be, since the menace that sits by our side today has been rising gradually from beyond the horizon for at least a quarter of a century. To preach the warning, even if in some degree by many eyes and many ears it went unheeded, has seemed to your editor to be

his most manifest duty. However, attention to this has not in any way diverted attention from the physical side of the ILLINOIS MEDICAL JOURNAL. In format and in circulation it has ranked highly, both nationally and internationally. Its advertising has been of excellent stability throughout the worst depression in the nation's history. As to its editorial content—for which hard-working, diligent and gifted men of medicine have generously opened their hours of experience for sharing with their fellow workers—the recognized value to the medical world is only too obvious, and from the editor must receive expressions of deepest gratitude and sincerest appreciation, which undoubtedly are participated in by every scientist who reads our JOURNAL.

SENATOR KING ON REGIMENTATION

Senator King of Utah, in a speech in the Senate on December 9, 1937, said:

Regimentation is now quite fashionable in Russia, Germany, Italy, and in some other countries; but, as regimentation advances, liberty and the rights of individuals are submerged. Many people are fascinated with the idea that laws are more important than liberty, and that bureaus and powerful government agencies are necessary, even in democratic governments, to control trade and industry, and the lives and habits and activities of the people. It is somewhat singular that, with the pages of history before us, we should follow obsolete and discarded policies and introduce into our economic and industrial life policies that are an outgrowth of oppressive paternalism and autocratic rule.

THE DOCTOR OWNS THE PATIENT BY CONTRACTUAL PROPERTY RIGHT; THE PATIENT OWNS THE DOCTOR BY THE SAME RIGHT

Dr. John J. Hurley, Boston, Mass., under date of Aug. 4 in the VOICE OF THE PEOPLE of the *Chicago Tribune*, under the heading "Doctors, Patient and Government," says:

A short time ago you gave space to the speech of Senator J. Hamilton Lewis, delivered to a section of the American Medical Association. In my opinion the senator had such a complete misconception of his subject that I am kindly asking you for space that I may overtake him.

I think that without a breach of modesty or

the truth I may qualify as a doctor, a lawyer, and a nationally known medico-legal economist. In any event, for thirty-five years I have been pointing out to Presidents, congressmen, governors, state legislators, sociologists, and medical editors, who ought to know better, that the doctors of the United States are not going to be required to do anything they do not want to do, at least while the Thirteenth Amendment remains in the Constitution of the United States. As the late Chief Justice Fuller so forcefully pointed out, there are certain things which cannot be brought about in the United States, under the guise of an exercise of police power, and one of them is involuntary servitude.

I think that this will make it perfectly clear to the senator that his idea of issuing a federal or state license to the doctor, contingent on his entrance into a compulsory contract—a legal monstrosity—had better die aborning.

Further, the senator seems to have forgotten the legal status of the doctor. At law, with the usual exceptions, the doctor is an "independent contractor" who feels, rightly or wrongly, that it is in the public interest at the present time to keep the government a "stranger to the contract." As long as he feels that way, a contract being a meeting of the minds between two or more persons for a consideration, there is nothing the senator can do about it.

It only remains for me to supply the proper response to the senator's unanswered question, addressed to the convention of the American Medical Association: "Where did you doctors get the idea that you owned the patient?"

Senator, the doctors got the idea from the laws of contract, the idea finally resolving itself into fact: The doctor owns the patient by contractual property right; the patient owns the doctor by the same right; the government owns neither, but on the contrary is owned by both.

THIS MAY BE THE MACHINE AGE, BUT THE PEOPLE WHO LIVE IN IT CONTINUE TO BE HUMAN BEINGS

One of the drastic complications of modern civilization in relation to the practice of medicine is the change in attitude between the physician and the patient.

The old fashioned physician was wont to treat persons. Individuals, the ailments of personal entities received the advice and attention. But

nowadays the doctors treat disease. The ailment rather than the ailing is the chief objective of the practicing physician of today. There is no quibbling over the fact that the element of the human relation is almost entirely eliminated in modern treatment of disease.

Substitution of machine for human routine is possible with profit only in the exact sciences, in which classification medicine most surely does not lie. Even in the application of the exact sciences it is impracticable to omit the human element, for any profession that omits the human element ceases to be a profession and becomes a commercial enterprise. After all, the verities and the humanities do not lie so very far apart.

That the awakening to this truth is becoming general is evidenced by the increasing insistence of the value of humanistic studies as a preparation for a professional career by heads of schools of law, medicine, dentistry, architecture and even of engineering.

There is much of interest as well as food for thought in the comment made by an octogenarian and outstanding physician, Dr. William Henry Welch. Epitomizing the impersonal automatism of the day as meat for the critic's jaws, Dr. Welch, while approving the soundness of modern research, does not fail to remember the virtues in the older dispensation."

"One thought makes me look back with gratitude and love to the old family doctor," remarks Dr. Welch in an interview published in the *New York Times*. "The old fashioned family doctor treated people. The doctor of today treats disease. The old family doctor, though he had a long beard where germs abounded and even a spotty vest, knew his patient and in many cases the patient's family and his physical peculiarities. If medicine were an exact science I should say, 'Yes, the family doctor has outlived his generation.' But it is not, and he has not."

In this connection there is advantage in quoting from a recent editorial in "*America*," to the effect that "A patient is something more than a sprain, and a client something that is not all tort. The physician and the lawyer must recognize this truth if they wish to exercise all the power for good inherent in a profession. That power is primarily opportunity and ability to contribute to human welfare. Otherwise they

are individuals who make a living on the woes of their fellows."

There is no argument that a man who confines his interests to one angle of life alone, ignoring contingencies and tangencies of all the complexities that go to make up life, will eventually find his power in his profession as dried up and atrophied and emasculated as are his personal relations. There must be a keen understanding of the good and evil that is in man, and in individual men for a physician to be able to live up to all that his profession implies and even to what it demands.

Those white-coated machines who look upon each patient with the cut-and-dried aloofness with which an entomologist regards a new bug or a botanist a fresh sprout are lacking in the vital spark that makes a physician a great man.

The germs in the beard of the old fashioned doctor are well consigned to the limbo of forgotten things, but what needs to be raised again from the dead is the kindly, encouraging, absolutely human look on the face of the old fashioned physician that made the suffering human feel that in him lay a friend who was both willing and able to pull him through the rough places and whose presence was almost as excellent a panacea as his pills. *This may be a machine age, but the people who live in it, fortunately, continue to be human beings, and a certain amount of humanity is necessary in dealing with them.*

The old fashioned family doctor treated people. The doctor of today treats disease.

Larger doses of Diphtheria Antitoxin are apparently necessary for satisfactory therapeutic results in cases which show sensitivity to horse serum. Therapeutic results following administration of diphtheria antitoxin were distinctly less satisfactory and the incidence of complications was considerably higher in patients with immediate serum reactions. Davidsohn & Hunt, *Am. J. Dis. Child.* 52:1325, 1936.

Neurologic complications of pernicious anemia can probably be prevented if effective therapy is begun early and continued uninterruptedly. After reviewing a large series of cases the author concludes that "the attitude of therapeutic nihilism that exists in certain quarters is not justified." Needles, Wm., *Arch. Int. Med.* 58:765,

Raynaud's disease, of seven years' standing, was successfully treated by administration of the estrogenic hormone. 450 I. U. of estrogenic substance in oil was given intramuscularly on alternate days for 7 doses and repeated one month and again two months later. Klinefelter, E. W., *Arch. Dermat. & Syph.* 34:887, 1936.

MEDICAL ECONOMICS

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The frequency with which articles are appearing in the newspapers of this country on the subject of the future conduct of the practice of medicine would be alarming except for the fact that the newspapers are presenting the entire subject so fairly. In December the Town Meeting of the Air entered the field by a presentation of the subject under three headings, Private Practice, State Medicine, and Cooperative Medicine. Although the writer of this article listened carefully to the discussion, he does not feel capable to comment on the facts presented until he has had the opportunity to read carefully the printed copies of the speeches of the evening along with the questions and answers. One thing was quite evident during the entire presentation. Many of the laity have been thinking about this subject, and as evidence of their knowledge and interest, are able to ask leading questions which are difficult of satisfactory answer by way of the radio, due to lack of sufficient time and the desire of those sponsoring the program to keep it snappy; at the same time it is interesting and authentic. The winter will probably present similar programs over other stations and every medical man should try to listen to them. The public are asking their family doctor what he thinks about the facts so presented and it is necessary for the doctor to be up on the entire subject. Failure on the part of the physician to evidence more accurate knowledge than his questioner, puts the entire medical profession in a bad light. One cannot dismiss the subject with a few unkind remarks. Such inquiry gives the family physician a fine chance to tell his friends the exact reasons why he is not in favor of a change in the manner of practicing medicine in the United States. The public will listen to him when they will not to public speakers.

Last month we referred to the latest book by Dr. Cronin, *The Citadel*. It has become one of the best sellers, and is being discussed every-

where. It is to be hoped that the medical profession has read it so that they can be able to discuss the message contained therein. A few weeks ago an Editorial in the *Chicago Tribune* analyzed the book and came to the same conclusion that this book was definitely *not* favorable to State Medicine, but rather a severe indictment of the methods now so common in England and condemned both state and contract medicine. Such editorials as this are of untold value to the medical profession and coming from the editorial staff of the *Tribune* are particularly appreciated.

An article in the *London Mail* of September 30, 1937, with the heading "Family Doctor for Every Home" was of great interest to the writer. After deploring the lack of a general health policy in England, where they claim that the existing health services have grown piecemeal, the article concludes: "A system that does not provide for free and open choice of physicians, however excellent it may be from other points of view, suffers a serious handicap for which no administrative excellence can compensate." This is a far cry from the methods of State Medicine in some countries where little or no choice of physicians is allowed and is very encouraging to those of us who have been insisting that free choice of physicians is a basic requirement of any satisfactory method of practicing medicine. Evidently England is returning to that opinion rapidly after twenty-five years of experimentation.

A recent edition of the *Survey Graphic* contained an article by a Doctor Orr, graduate of a Chicago Medical School in 1935. He commends the system of England most heartily. It seemed a little unusual for a man who has had no experience in private practice and relatively little medical life to have already arrived at a definite conclusion so set that he can write authoritatively on so complicated a subject. One must wonder, whether he was so well entertained and con-

ducted that he fell into the error so common to American Diplomats and other Visitors of Europe of losing a sense of balance and forgetting what he really went over to Europe for. It will be interesting to read subsequent articles on the systems of Germany and Russia.

Nation's Business in November, 1937, contained a most excellent article from the pen of George Morris on the subject "The Taxpayer Pays the Doctor." We would recommend that all who are able to read this article do so. It presents some little known facts in a most entertaining manner.

It can be seen from the above, that papers and periodicals are full of information on the subject of medicine. We, as medical men, must read as many of them as we can in order to know more about the subject than the laity, who when interested are coming to us to know what we think about the articles. It is not enough to condemn them. We must be able to advance definite reasons for our oppositions and those reasons must be able to stand up under further questioning. Again this month, we are fortunate to have an article by Dr. C. S. Skaggs on this very subject, "Public Opinion." Dr. Skaggs recognizes the problem and presents his idea in a manner, which we feel sure you will all appreciate.

The members of this Committee wish to the members of the Illinois Medical Society a most Happy and Prosperous New Year.

E. S. Hamilton, *Chairman*.

PUBLIC OPINION

On May 25, 1937, Dean Carl Ackerman, of the Graduate School of Journalism of Columbia University, delivered an address at the annual meeting of the Medical Society of New York, on the subject of "The Doctor and Public Opinion." He began his address with this statement, "The trend of the times indicates, I think, that the future of our civilization will be determined by public opinion. If that be so, then the doctor needs public opinion as much as public opinion needs a doctor."

This statement needs our careful consideration and serious thought regardless of who made it, but coming from Dean Ackerman who draws his thoughts deeply from his depths of Wisdom and large store of Knowledge, we should all the more give attention to these words.

Public opinion. Just what is it, and from

where does it come and what is used to crystallize it? What is public opinion? I think that we are in the main agreed as a people. From where it comes and how it is shaped and crystallized, is a problem yet unsolved to a degree that it can be controlled for the best interests of the many.

If civilization is to be directed and determined by public opinion there is a need for some drastic measures to be taken upon the source from which public opinion is directed or civilization is doomed to selfish interest and control which means a complete collapse, for selfishness cannot create and maintain that which is good. If we are to depend upon public opinion, we must first bring men into the knowledge of the fact that he is his brother's keeper for we cannot depend upon our modern set up of creating public opinion. William Penn said that a man's religion could not benefit himself unless it made his neighbor better. So it is of public opinion; it cannot benefit civilization unless it makes better the source from which public opinion originates.

Dean Ackerman farther stated that for one hundred and thirty years the New York Medical Society had held successful annual meetings without the necessity of doing so until recently, of considering the relationship between the doctor and public opinion. This statement carries a full measure of truth in it. In the past we met in our annual meetings for the one main purpose to advance our medical science and to share with each other the new facts we had learned, that we might return home to better serve our patients. Now, we might say that we meet to protect ourselves from public opinion. This is already hindering the advancement of medical science. There is, as far as I can see or understand, no reason why this time should be wasted in this manner if it was not for a selfish interest that is endeavoring to create a public opinion that will destroy the usefulness of medical science, and when they have destroyed it what have they to offer in its stead?

What force is behind all this? The desire for centralization of power and authority. Who is to have this authority and power? This is the crux of the whole question.

After years of advanced education which has been placed within the reach of practically everyone, we have so educated ourselves that we are no longer capable of governing ourselves but must be governed by the politician who in the main

is uneducated in that which he assumes to control. The basic principle of civilization is the individual; nowhere except in Canada is there much of a record of man being created in masses and these are females, and no doubt that this unusual birth was one by one.

America was the first to break the old established rule that the right to govern was invested in the birthright of some individual and place it in the hands of the people. Government must be for the individual and not by the individual. Government must not restrict the individual, only in wrong doing and the judgment of wrong doing must not be too restricted. Are we going to permit a public opinion to be created which says that the individual no longer has the right to the pursuit of happiness? Will we as a medical profession permit a false propaganda to create a public opinion that shall demand that we be regimentated under non-medical dictatorship?

What is socialization of activities and the centralization of authority? From what source has this selfish denial of individual rights and justice emanated? I wonder how much would be left of the material which produced this idea of government if we extracted from it how much we as a people had submitted to political discipline.

The proponents cry aloud about the wrongs of capitalism. That in this system there have been wrongs no one disputes, but what wrongs can socialization and centralization of power take out of capitalism when such a condition is only capitalism centralized under political control with all its abuses?

It is this same group who are asking for centralization of authority that are asking to control the practice of medicine. The first question that confronts us is: What are the qualifications of those who seek the control of medicine? Are they competent to judge the rights and wrongs of the practice of medicine and to correct the wrongs if this power is delegated to them? We have watched the affairs of government slowly but surely drift into the spoils system and it would take an imagination of an unusual quality to find an image of right to the masses in this system. This same family of politicians that have claimed to have the knowledge of the science of government to qualify them to administer the affairs of government have permitted to grow up in this nation of ours the greatest system of crime recorded under any recent or distant date and still permitting it to grow. We have a racketeering

system equal to any. They said that they could not enforce prohibition, a part of the Constitution, and now the liquor traffic is beyond their power of control and the gambling situation is an unknown quantity to this group. Now they, with these failures, tell us to turn the practice of medicine over to them and they will make it what it should be and what the people want in medical service. The doctor can surely be excused for having a few doubts, and for asking some questions. We wonder if the money that is required to support these few errors just referred to was spent on the family toward those things needed in the home would have any effect upon lowering the sick days in the homes of our people. Sometimes a doctor sees the effects produced by a fit to free indulgence in certain kinds of drinks that causes him to have a suspicion that they may have some relation of bad health. Really is it what the doctor charges for medical service to the sick that is tearing down the financial strength of our people or the cost of producing ill health?

I wonder what might be said if the cost of medical service equalled that of liquor, gambling, racketeering, crime and the spoil system? Just these few items that our officials are supposed to control and prevent and do not, and ask for the control of medical service to save the people from the high cost of medical service, if they could in some way divert some of the money spent on these other things back to care for the poor over charged sick man what would happen? We are spending a few pennies to give people medicine free to be treated for syphilis and doing nothing to curb habits and conditions that spread the disease. Like the welfare worker who cries aloud for more poor people to welfare but not a whisper for the prevention of poverty. And so we cry aloud for more syphilitics to furnish medicine to, and reduce the cost of medical service. The doctor can't be too severely censored for asking who gets the reduction.

It has been said that there exists a public dissatisfaction with our present system of the practice of medicine and the privileges of those sick and that our present system does not fit the needs of those sick.

This is public opinion it is claimed. I do not accept this as wholly true, in fact I think that it is far more apparent than real. But let us grant it as wholly true, what caused this public opinion? From what source did it originate? How

much of the propaganda that was used to create this opinion of the public was based upon the existing facts? These are questions that are answerable. The facts are known. If public opinion has been formed relative to the practice of medicine from false facts, it is our duty to change this public opinion.

It is not easy to create a public opinion along right lines. This is due to the fact that people have become too sub-conscious and dislike those things that are essential. This has caused a radical change in the thinking of people. We must give this due consideration in determining what people are thinking about the doctor.

People are submitting themselves to be controlled by dictators which means in America that something different that has existed heretofore has occurred in the thinking of mankind, and we find a fixed state of mind which is almost beyond being changed by reason. But because the task is a hard one is no reason for us to give up.

The type of public opinion that exists today separates us from each other by a state of suspicion which causes us to form hostile groups. This adds to our difficulties.

First we must find a way to cause people to like and respect us, then they will have reason to trust us, and once the people trust us we can mold public opinion.

Closing thought: Social justice and social security cannot be bought with money.

The costs of these are beyond the intrinsic wealth of any nation. This has been recently demonstrated. These are not money questions. They are living questions. They are the products of right living as we relate ourselves one to the other.

C. S. Skaggs, M. D.

ONE OUT OF EVERY FOUR ADULT PERSONS ON THE PUBLIC PAYROLL

It is claimed that 200,000 Chicagoans are on public payroll of one type or another.

Of these, 27,000 are directly employed by the city. Approximately 67,000 are on Work Progress Administration payrolls, while the 75,000 still on relief are costing taxpayers \$1,000,000 a month.

These payrollers would make up a formidable army. Their number is equivalent to the population of a fair-sized city.

Reduced to lowest terms, the ratio of payroll-

ers to Chicagoans—men, women and children, is one to eighteen. This means that virtually every four wage earners must contribute to the support of one public servant or one ward of the state.

In addition, they are taxed for the support of an increasing prison, hospital, sanitarium and asylum population.

Fully three-fourths of those receiving public support, however, are on EMERGENCY payrolls.

It is for the voters and taxpayers, their employers, to decide how long the emergency shall last.

Payrollers, too, have votes, and doubtless will prolong the situation indefinitely, if possible. Public officials will do nothing about it so long as they can CAPITALIZE on relief.

Taxpayers must begin to look to their own interests.

Our federal tax problem has also grown topsyturvy. It has grown, today, to the point where no fewer than 175,000 government units collect United States taxes. It has grown to a point of such disorganization and confusion that it is completely inadequate to deal with anything resembling a businesslike manner.

The annual tax bill of the U. S. is now in the neighborhood of \$12,000,000,000. That is almost \$100.00 a year a piece for every man, woman and child in the Nation. It is almost \$400.00 a piece for every head of a family. It is one-fifth of the national income. It is the biggest tax bill in the world.

Correspondence

MEDICAL CARE

East St. Louis, Ill., Dec. 4, 1937.

To the Editor: Enclosed is a copy of the letter I wrote to Dr. J. P. Peters, secretary of The Committee of Physicians, for the presentation of certain principles and proposals in the provision of medical care. CHARLES S. SKAGGS, M. D.

East St. Louis, Ill., Dec. 2, 1937.

Dr. John P. Peters,
789 Howard Ave.,
New Haven, Connecticut.

Dear Dr. Peters:

I have no reason to assume that you expected me to write you relative to this subject or any other, but since your office has mailed me the list

of proposals as set up relative to the improvement of medical care, growing out of the American Foundation of Government. I take the liberty to express at least my disagreement with the proposals as set forth.

I have the greatest admiration for the men composing the committee, but I am far from being convinced that their minds have directed the summing up of the views of those who expressed themselves in this study.

I am not convinced that these men would, in any way, lend themselves to anything that would undermine the foundation of democracy. As I review the report as published, all through it I see the expression of what is desired by a certain group and the setting aside that which does not blend with one desired purpose. I will admit that in the medical school you may progress along the course that your committee proposes and that you who are confined within these walls may and do come to the conclusion that all that are sick are deprived of good and adequate medical care, if they do not receive the service of those within this medical environment. I will admit that you may even be more honest than selfish in your approach to these conclusions, but I do not admit that you are right.

To your thought, the individual is only important in so far as he is a part of the mass of humanity. You must lose sight of the fact that only a small part of medicine is science, perhaps because you come in contact with and are concerned only with this small part.

You may deny me the right to these conclusions. In your set of principles, No. 1. That the health of the people is a direct concern of the government. This is not a fact and never can be a fact in a free country. It destroys the most sacred right the individual can ever possess. I do not refer to public health, I refer to the sick individual. Such a principle can be nothing more than the centralization of power and can only be forced by dictatorship upon the people.

The third principle refers to the economic need as an obstacle to adequate medical service. There is no economic need among the sick that denies any of them of medical service. This is only made apparent by propaganda. The absence of money in a sick man's pocket will never take from him an adequate medical service as long as the physician remains free from governmental control, but governmental red tape will

withhold from him medical service of any kind or type.

I realize I have now written more than you will read. I do not want to be rude, and if I am, I apologize yet I say in all sincerity that you men are lending yourselves to the destruction of the greatest medical science and progress the world has ever known; why tear down that which is going up? If our medical science and service is not better than all the world, how can we be what we are in medical progress and health?

I thank you for the time you have given me and I express the hope that your committee will join hands with us and save a great profession from the control of the Ballot Box. Your road leads only there.

Sincerely,

CHARLES S. SKAGGS, M. D.,

Kewanee, Ill., Dec. 14, 1937.

BASKET BALL IS TOO STRENUOUS FOR CHILDREN

To the Editor: Basket-ball, as it is being played today, due to the present High School rules (College as well) is a game which is played by thousands of our boys, and under the present rules has been speeded up to such an extent that, in my opinion, it is actually dangerous.

Recently a boy in a near-by town collapsed at the close of a game and died an hour later. I witnessed a game between Rock Island and Kewanee last Friday night, which was extremely fast and at least six of the men played the entire game. There is no rhyme nor reason to the committee on rules which are attempting to speed up the game for the pleasure of the spectators, not taking into consideration the players, and in my opinion, it is time the medical men of the state used their influence to have this matter corrected. Very truly yours,

C. PAUL WHITE,

Pres., Kewanee Board of Health.

P.S.—Enclosed is a copy of a letter I wrote to the President of our Board of Education, in protest:

December 14, 1937.

Dr. H. D. Swain, President,
Kewanee School Board,
Kewanee, Illinois.

My dear Doctor:

It has been my privilege to attend a few basketball games this fall and as a physician and as

President of the Kewanee Board of Health, I feel it is my duty to register a protest on the basketball game as it is played today.

Eliminating the center jump has apparently speeded up the game twenty to thirty percent, which already was fast enough for the physical health of the players.

No matter how well checked these boys are, there is bound to be some players, whose hearts will not, and can not, stand the strain and in my opinion the untoward effects will far surpass any benefit which might otherwise be gained from this game.

I trust that you will use your influence that the rules may be so changed that a boy must either be substituted at regular intervals or that more rest periods may be forced upon the players to eliminate this great danger.

C. PAUL WHITE.

THE PARABLES OF SOPHISTES. THE SEER

THE PARABLE OF THE DISHONEST HEALERS
PEORIA, ILL.

Now it came to pass that the Younger Practitioner, in the course of his diligent labours and in spite of his successes in the healing art, encountered many anxieties of spirit and thereof one brought more and more of disturbance to his soul.

Thereupon, after the harvest time, he betook himself unto Sophistes, the Seer, that mayhap he might learn from him the answer to the problem uppermost in his mind.

When he cometh to the wise one, he saith, "O, Sophistes, the Seer, learned as thou art in the ways of man and in all that pertains to the healing art, I come to thee humbly craving for thine answer to a vexatious problem that teareth my spirit even as the thorns and the briars of the wilderness teareth one's flesh."

"For half a score of comings and goings of the seasons have I laboured at the healing art among my people. I have dealt justly and uprightly with them in every right work and have given without stint the best that was mine to give. I have kept apace with newer things in healing and chirurgie by much reading and by concourse with my fellows and have gone afar to the conclaves of those who are our leaders and have sat at the feet of the learned."

"Thereby hath my learning gone on apace and somewhat of wisdom hath been bestowed upon me. In all humbleness the feeling resteth upon me that my doings have been worthy and oft-times it hath been given me to feel a pride of craft in my accomplishments."

"And now it so befalleth that there hath come into the city of my labours one, who with scant learning proclaimeth from the housetops his skill in healing. He speaketh spitefully of me and holdeth my doings up to bitter centures and uncharitable imputations. His ways are an offense unto me for he savoreth only of ignorance."

"His methods are as crude as his mouthings are brazen. He hath a girdle of coarsely woven hair which he saith cometh from the tail of a white wild ass. This he windeth about the torso of the ailing one and then he pulleth and twisteth the arms and legs of the afflicted and smiteth him with vigor from the upper to the nether spine."

"For a time this one and that one bare tales to me of these crude doings of this man of ignorance and of a perverse generation. I was not wroth and rebuked them not but smiled at their madness and folly."

"Howbeit, shortly came other tales and purporting great and marvelous cures thereby. One of the sanhedrins acclaimeth in the temple relief from an affliction of long standing and a tax gatherer goeth from household to household regaling all and sundry of the humor from which he hath been relieved by this man of magic."

"Yea, it goeth even further until now I find that many whom one calleth not ignorant and for whom I have, in bygone days, laboured diligently, are now proclaiming great and wonderful cures when this brazen man of ignorance engirdleth them with the plaited hairs from the tail of the white wild ass and smiteth them on the spine and twisted their extremities."

"He seemeth to exercise dominion over them and to entangle them with his talk. He doth deceive the very elect. His renown seemeth not to diminish or decay, but increaseth and taketh strength and he reapeth a goodly fruit thereby. Beholding all this causeth my heart to despair and gloom encompasseth my soul."

"Why, O, Wise and Learned One, should the just and proper methods of healing that have full approbation from the learned, be cast aside

and the ways of ignorance and darkness be accepted?"

Sophistes, the Seer, smiled indulgently and into his kindly gray eyes come a reminiscent look as he replied:

"My Son, it was ever thus."

"In the days of my youth there came into the village of my birth an ancient woman with sharp features and penetrating eyes. Whence she came we knew not. She garbed herself in unusual garments and about her was an air of mystery."

"Soon it becometh whispered about that she had access to occult things and witchery and had supernatural power over illness of every sort by incantations and by the giving of a brew of bitter herbs while the ailing one uttered apparently meaningless words in the manner of supplication."

"Many came to her and her fame spread far beyond the confines of our village. Not alone came the ignorant but many of those we looked upon as men of wisdom. They listened to her incantations, partook of her brew of bitter herbs and devoutly uttered the meaningless words. And many proclaimed great benefit thereby."

"I come to know her well and my mind was filled with wonderment at her doings. Later with a boldness born of youth and long acquaintance I asked her why she resorted to incantations if healing lay only in the herbs and why she gave the same brew of herbs to all regardless of the ailment and why the ailing one was required to repeat phrases that had no meaning?"

"I further told her that it had long been my ambition to enter the field of healing and by that token I had much of interest in her methods and her purported cures."

"She looked at me long and sharply and at last she spake. 'Young man, as time goeth on apace, method in the healing art changeth, but human nature changeth not one jot or tittle. If thou wouldst treat the maladies of mankind and doest so by the accepted methods of thy teachers then must thou compete with every other healer. To be spared that competition thou must insert into thine art something wholly different from the proscribed methods of thy fellows. What that be maketh but little difference, whether it be thine own incantations, or the laying on of hands, or prayer, or the giving of bitter herbs. But one thing is vital: the ill must be given some routine that they themselves must do and

follow. Thereby if recovery faileth the fault is theirs and not thine, for it can always be shown that they failed in the part given them to do."

"Remember one thing," saith she, "the credulity of man is such that it mattereth not how unseemly thy method appeareth in the eyes of the learned, there are still enough of mankind who lack balance and whose learning is but a thin coat over primal ignorance and a belief in the mysterious, that thou wilt have many flocking to thy door and thou wilt gather in many pieces of silver thereby."

"Shortly thereafter this woman departed hence and was seen no more."

Sophistes, the Seer, smiled at the Younger Practitioner. Be mindful My Son, it was ever thus and thus will it ever be, but pride of craft and a clear conscience outweigheth many pieces of silver and peace of soul and true felicity cometh only to him who dealeth justly and uprightly with his neighbor. Furthermore the days of that man who transgresseth against honesty are brief and shortly he passeth into everlasting darkness."

"Thus saith Sophistes, the Seer."

C. G. FARNUM, M. D.

THE CANNABIS TAX ACT OF 1937

Cannabis is the same as marihuana, Indian hemp, hashish. Marihuana is the Mexican term. The plant was known to the Greeks as nepenthe. Marihuana or Cannabis is dried and frequently the leaves made into cigarettes. These cigarettes are sometimes called reefers and are also known as "Goof Butts," "Muggles," "Tea" or "Gage."

Any doctor wishing to prescribe "Cannabis" under any of its various names must procure a license to do so.

The Federal "Marihuana" act became effective October 1, 1937. As several inquiries have been received at our office from physicians relative to regulations for prescribing this drug, we have decided to reproduce the explanation prepared by the Bureau of Legal Medicine and Legislation of the American Medical Association.

FEDERAL CANNABIS REGULATIONS APPROVED*

The general requirements of the act as they relate to physicians were stated in the Organization Section of the A. M. A. Journal, September 11, pp. 31B and

*J. A. M. A., October 16, 1937, Vol. 109, No. 16, pp. 63B and 64B.

32B. Every physician who distributes, dispenses, gives away, administers or prescribes cannabis or any of its derivatives or preparations is required by the act to register with the collector of internal revenue of his collection district, obtain an official registration number and pay the required tax.

Applications for registration must be filed on form 678c, procurable from the collector of internal revenue. An inventory, in duplicate and under oath, of all cannabis and preparations thereof on hand must be filed with the application. Physicians will normally register in class 4 and be subject to a tax of \$1 each year. A physician who sells or dispenses cannabis apart from the legitimate practice of his profession is liable to an additional tax of \$3 a year as a dealer. If he dispenses cannabis only incidentally, to the legitimate practice of his profession, he incurs no liability for the tax imposed on the dealer. A physician maintaining an office in a collection district where he is duly registered with the collector of internal revenue and where his stock of cannabis and his cannabis records are kept may, but only in the course of his professional practice, distribute, dispense, give away, administer or prescribe cannabis in other collection districts in which he lawfully engages in the practice of his profession, without incurring additional tax liability; but if he maintains an office in another collection district or even maintains two or more offices in the same collection district, he must pay a tax with respect to each office.

Hospitals, colleges, medical and dental clinics, sanatoriums and other institutions, not exempt as government institutions, are subject to the same taxes and incidental regulation as other registrants similarly dealing in or handling cannabis. When an institution is subject to tax, the head thereof or of the department wherein the cannabis is to be used must sign the application for registration. Nurses, under the regulations, are regarded as agents of the practitioners or institutions under whose direction or supervision their duties are performed. They are not permitted to register under the act nor are they permitted to be in possession of cannabis except as such agents, or as patients. Cannabis left by a physician with a nurse, to be administered during his absence, must on her discharge from the case be returned to the physician, who will account for it on his records. Any cannabis found in the possession of a nurse not at the time under the supervision of a physician will be forfeited to the government.

A physician desiring to obtain cannabis must make application on form 679a (Marihuana), to the collector of internal revenue for the district in which the physician is located for the purchase of an order form. The application must show (1) the physician's name, address and cannabis registry number, (2) the name and address of the person from whom the cannabis is to be purchased, and (3) a description of the desired cannabis and the amount to be purchased. The application must be accompanied by a certified check, cash or money order in payment of the transfer tax of \$1 an ounce or fraction thereof, plus 2 cents in payment of the order form. Order forms will be prepared by the col-

lector in triplicate. The original and duplicate will be delivered to the physician. He will deliver the original to the person from whom he purchases the cannabis and preserve his duplicate copy for two years. The triplicate will be retained by the collector. There are no exempt medicinal cannabis preparations; every preparation containing cannabis in any form and in any amount is covered by the act. Physicians must keep daily records showing the kind and quantity of cannabis dispensed or administered, the name and address of each person to whom dispensed or administered, the name and address of the person on whose authority the cannabis was dispensed or administered, and the purpose for which it was dispensed or administered. Every such record must be kept for a period of two years in such manner as to be readily accessible to inspection by investigating officers. No special record form will be furnished by the government for the use of those registered as practitioners, including hospitals and institutions, but each registrant is advised to keep records in the manner that is best calculated to enable an inspecting officer quickly to ascertain the quantity and kind of cannabis used daily. The initials of the practitioner giving directions for the administering of cannabis to a patient in a hospital should appear on the patient's record chart, or a prescription may be used, giving the name and address of the patient, the date, and the physician's signature or initials, which should be filed with the pharmacist in charge of the drug room before the cannabis leaves his charge. If, however, a prescription is used, reference to it should appear on the chart.

All prescriptions for cannabis must be dated as of and signed on the day when issued and must bear the full name and address of the patient and the name, address and cannabis registry number of the practitioner. Prescriptions should be written with ink or indelible pencil or be typewritten. If typewritten, the prescription should be of course signed by the physician. The refilling of a prescription for cannabis is prohibited by the regulations. Generally, the furnishing of cannabis pursuant to telephone advice of physician is prohibited, whether prescriptions covering such orders are subsequently received or not. In an emergency, however, a dealer may deliver cannabis through his employee or responsible agent pursuant to a telephone order, provided the employee or agent is supplied with a properly prepared prescription before delivery is made, such prescription to be turned over to the dealer and filed by him as required by law within a reasonable time after delivery. The government does not furnish prescription forms. Any form may be used, provided it is properly executed and shows the required information.

A physician who utilizes cannabis in the course of his professional practice should obtain a copy of the regulations that have been promulgated and familiarize himself with their requirements. Application for such a copy may be made to the collector of internal revenue of the collection district in which registration is to be effected.

—Journal Florida Med. Assn.

EDUCATIONAL COMMITTEE ILLINOIS STATE MEDICAL SOCIETY

December, 1937

SCIENTIFIC SERVICE:

13—Programs were arranged for Will-Grundy, Mason, Menard, Scott County (Iowa), Champaign, Jo Daviess, Fulton counties.

The first week in December a letter was sent to the officers of county societies over the signature of Doctor Berghoff, Chairman of the Scientific Service Committee, suggesting that special programs be given on PNEUMONIA. As a result of this letter a number of county societies are having these programs. The medical schools are cooperating in furnishing teams of pathologists and internists to present these programs.

SPECIAL PROGRAMS ON OBSTETRICS AND PEDIATRICS:

Through the Scientific Service Committee 13 pediatricians and obstetricians were scheduled to present programs in December. The programs given were as follows:

December 21—Jasper-Lawrence-Crawford Counties:

Dr. W. J. Dieckmann—"Forceps Delivery."

Dr. I. M. Levin—"Whooping Cough."

December 2—Coles-Cumberland Counties:

Dr. W. B. Serbin—"Repair of Obstetric Injuries."

Dr. Orville Barbour—"Infant Feeding."

December 6—Hancock County:

Dr. D. A. Horner—"Home Versus Hospital Deliveries."

Dr. George L. Drennan—"Infant Feeding."

December 23—Jefferson-Hamilton-Wayne-Franklin-Saline Counties:

Dr. Clifford Grulee—"Infant Feeding."

Dr. M. L. Blatt—"Dysentery."

December 2—Union-Perry-Jackson Counties:

Dr. J. L. Baer—"Cesarian Section."

Dr. J. H. Wallace—"Rheumatic Heart in Children."

December 2—Lee-Whiteside Counties:

Dr. W. F. Mengert (Iowa)—"Forceps."

Dr. A. D. Biggs—"The Premature Infant."

December 9—Jefferson-Hamilton-Wayne-Franklin-Saline Counties:

Dr. O. H. Schwarz (St. Louis)—"Management of Prolonged Labor."

Doctor Wightman has given the office of the Educational Committee an assistant to help with the details of these programs. The extra publicity and notices sent out as a result of this assistance has helped to increase attendance at the programs. The following summary of this publicity may be of interest:

December 21st meeting—Jasper-Crawford:

102 Notices sent to doctors.

34 Press releases.

December 2nd—Coles-Cumberland:

114 Notices to doctors.

38 Notices to newspapers.

December 6—Hancock County:

106 Notices to doctors.

35 Notices to newspapers.

December 9—Jefferson-Hamilton:

134 Notices to doctors.

33 Notices to newspapers.

Same number for December 23rd meeting.

December 2—Union-Perry:

235 Notices to doctors.

22 Press releases.

December 2—Lee-Whiteside:

135 Notices to doctors.

29 Releases to newspapers.

A series of programs is now being arranged for Iroquois and Ford Counties.

SPEAKERS BUREAU:

Twenty-three speaking appointments were filled for lay organizations.

A letter is going out to the Principals of the High Schools of the State offering programs on CANCER for high school assemblies and science groups.

SPECIAL SERVICE TO COUNTY SOCIETIES:

202 Notices sent to doctors about Effingham County meeting.

315 Notices sent to doctors about LaSalle County meeting.

88 Notices sent to doctors about Bureau County meeting.

87 Notices sent to doctors about Jefferson-Hamilton meeting.

29 News releases about Effingham County.

101 News releases about LaSalle County.

54 News releases about Vermilion County.

4 News releases about North Shore Branch.

PRESS SERVICE:

20 Monthly health columns to newspapers.

441 Health articles to Illinois newspapers.

90 Releases to Chicago newspapers.

336 Copies of the above material to downstate libraries.

196 Copies of the above material to Chicago libraries.

448 Copies of the above material to Health Chairmen of clubs.

A questionnaire was sent to the offices of County societies asking if they wished to be kept on the mailing list to receive the material. They were also requested to send in names of others they thought might find the material useful. As a result we received 84 ADDITIONAL NAMES to add to our mailing list—this group represent business men, superintendents of schools, professional men, and others.

Articles were written and approved as follows:

Fight Tuberculosis

Pneumonia Warning

Mother Nature's Mistakes

Attune to 1938

An Important Date

Motor Accidents Increasing

Skull Fractures

Great Men

Candy in the Diet

Tuberculosis Today

EXHIBITS:

The Committee has changed the Field window monthly. It is rather difficult to find material which is suitable for such a small space and which will carry a story to the public at first glance.

The Committee has been invited to prepare an exhibit for 15 feet of space at the Stevens Hotel during the Mid-Winter Dental meeting which is attended by 10,000 or more dentists from all over the world. This meeting will be held in February.

Doctor Eben J. Carey, who is Director of Medical Sciences for the Rosenwald Museum of Science and Industry in Chicago, has asked the Committee to furnish an exhibit to be located in the Department of Medical Sciences of the Museum, which will be completed during the summer.

RADIO:

Radio programs are being continued over stations WGN, WJJD and WAAF. The time we formerly had over WBBM is now given to the University of Illinois as the director of their radio work is to be responsible for all the educational programs over WBBM.

After a recent broadcast given by our Committee—Subject "Sick Headache"—requests for copies of the talk were received from 53 cities in California, Canada, Connecticut, Illinois, Indiana, Florida, Iowa, Massachusetts, Michigan, Nebraska, Ohio, Oklahoma, Texas, Wisconsin and Washington.

Respectfully submitted,
JEAN McARTHUR.

SANGAMON COUNTY MEDICAL SOCIETY

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Charles F. Harmon.....Washington University
O. E. Ehrhardt.....Washington University
Ralph T. Clark.....Northwestern University
William J. Morginson.....St. Louis University
Y. A. Staton.....Rush Medical College

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Mrs. W. C. Martini Mrs. F. M. Davis
Mrs. H. P. Macnamara Mrs. G. G. Harvey
Mrs. A. J. Jones Mrs. J. A. Lindquist
Mrs. H. T. Morrison Mrs. Charles F. Harmon
Mrs. Edgar T. Blair Mrs. A. Vass
 Mrs. Friedrich P. Bornstein
 Mrs. Domenico Sterbini
 Mrs. Charles McLaughlin

Bridge Dinner.....
 Mrs. Nathan Rosen, Mrs. William J. Morginson

Hostesses

Mrs. M. E. Rolens Mrs. H. A. Aschauer
Mrs. F. P. Cowdin Mrs. E. L. Bernard
Mrs. R. J. Flentje Mrs. J. C. McMillan
Mrs. R. T. Clark Mrs. P. G. Kokenes
Mrs. B. L. Stewart Mrs. Milton Levine
Mrs. J. E. Reisch Mrs. T. G. Hill
Mrs. J. M. Salzman Mrs. Wm. DeHollander
Mrs. C. C. Copelan Mrs. W. W. Van-
 Wormer
Mrs. D. H. McCarthy Mrs. Noxon Toomey
Mrs. F. Y. Kuhlman

President's Luncheon.....
Mrs. O. E. Ehrhardt, Mrs. W. P. Lewis
 Hostesses
 Mrs. H. B. Henkel Mrs. J. J. Donovan
 Mrs. I. W. Metz Mrs. G. W. Staben
 Mrs. A. E. Walters Mrs. John R. Neal
 Mrs. J. E. Graham Mrs. E. F. Pearson
 Mrs. H. W. Sears Mrs. G. Koehler
 Mrs. G. H. Vernon, Jr. Mrs. D. J. Lewis
 Tea, Executive Mansion.....
Mrs. C. B. Stuart, Mrs. H. L. Metcalf
 Hostesses

Mrs. H. H. Cole Mrs. O. L. Zelle
 Mrs. H. C. Blankmeyer Mrs. Stuart Broadwell
 Mrs. A. C. Baxter Mrs. G. B. Stericker
 Mrs. R. I. Bullard Mrs. Geo. T. Palmer
 Mrs. John F. Deal Mrs. O. F. Maxon
 Mrs. Don W. Deal Mrs. J. M. Shearl
 Mrs. Frank N. Evans Mrs. H. H. Tuttle
 Mrs. James A. Day Mrs. Robert E. Smith
 Mrs. J. G. Meyer Mrs. C. L. Patton
 Mrs. G. J. Mautz Mrs. T. J. Hill
 Mrs. M. B. Jelliffe Mrs. B. W. Hole
 Mrs. R. F. Herndon Mrs. F. W. Light
 Mrs. K. J. Malmberg
 Dinner Dance.....Mrs. J. C. Jackman
 Mrs. H. H. Southwick Mrs. Thomas F. Harmon

HONOR ROLL FOR 1937

Counties throughout the State where the entire membership is paid in full for the current year.

- | | |
|----------------|-----------------|
| 1. Alexander | 25. McHenry |
| 2. Adams | 26. Marion |
| 3. Bond | 27. Massac |
| 4. Boone | 28. Mason |
| 5. Bureau | 29. Menard |
| 6. Clark | 30. Mercer |
| 7. Clay | 31. Montgomery |
| 8. Clinton | 32. Peoria |
| 9. Coles | 33. Perry |
| 10. Cumberland | 34. Piatt |
| 11. Douglas | 35. Pulaski |
| 12. Edwards | 36. Randolph |
| 13. Effingham | 37. Richland |
| 14. Ford | 38. Saint Clair |
| 15. Greene | 39. Saline |
| 16. Hamilton | 40. Schuyler |
| 17. Henderson | 41. Shelby |
| 18. Jasper | 42. Tazewell |
| 19. Jefferson | 43. Wayne |
| 20. Jersey | 44. Washington |
| 21. Johnson | 45. White |
| 22. Lawrence | 46. Carroll |
| 23. Lee | 47. Woodford |
| 24. McDonough | |

EXAMINATIONS AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY

The next examination (written and review of case histories) for Group B candidates who have filed applications will be held in various cities of the United States and Canada, on Saturday, February 5, 1938.

The general oral, clinical and pathological examinations for all candidates (Groups A and B) will be conducted by the entire Board, meeting in San Francisco, California, on June 13, and 14, 1938, immediately prior to the meeting of the American Medical Association.

Applications for admission to the June, 1938, Group A examinations must be on an official application form and filed in the Secretary's Office before April 1, 1938.

For further information and application blanks address Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburgh (6), Pa.

COMMITTEE ON MATERNAL WELFARE ILLINOIS STATE MEDICAL SOCIETY

The Council of the Illinois State Medical Society, following the procedure of numerous other states recently selected a representative from each district of the state to act on a Committee on Maternal Welfare.

The group met with Dr. Harold M. Camp on November 9 in Chicago. Organization of the group was completed. Dr. T. B. Williamson of Mt. Vernon, representative of the ninth district, was elected Chairman and Dr. John F. Carey of Joliet, representative from the eleventh district, was elected Secretary. The complete committee follows:

- 1st District—E. G. Quandt, Rockford, Ill.
- 2nd District—Joseph T. O'Neill, Ottawa, Ill.
- 4th District—Phebe L. Pearsall Moline, Ill.
- 5th District—R. R. Loar, Bloomington, Ill.
- 6th District—Milton E. Bitter, Quincy, Ill.
- 7th District—Walter D. Murfin, Decatur, Ill.
- 8th District—O. H. Crist, Danville, Ill.
- 9th District—T. B. Williamson, Mt. Vernon, Ill.
- 10th District—Henry G. Horstman, Murphysboro, Ill.
- 11th District—John F. Carey, Joliet, Ill.

Dr. Frederick H. Falls, Chairman of the Governor's Committee and Dr. Harold H. Hills of the Department of Public Health of the State of Illinois, addressed the group. They were invited to attend future meetings acting in an advisory capacity.

Headquarters of the new Committee will be located at the present quarters of the State Medical Society. It is planned to have regular quarterly meetings in Chicago.

In order that each county Medical Society may know the activity concerning Maternal Welfare and the local physicians may become more familiar with the progress, it is planned to select a local Committee in each county.

The next meeting is scheduled for January 9, at the Palmer House in Chicago, Illinois, at which time it is hoped the complete organization will have been accomplished.

FORMATION OF JOINT MATERNAL WELFARE COMMITTEE OF COOK COUNTY

Seven Cook County medical and hospital societies joined hands at a meeting at the Union League Club December 16 in order to maintain the highest possible

standards for medical and hospital care of newborn and maternity patients.

Concrete evidence of this cooperation was the formation of the Joint Maternal Welfare Committee of Cook County, which comprises two representatives from each of the following powerful medical and hospital organizations: The Chicago Gynecological Society, the Chicago Medical Society, the Chicago Board of Health, the Chicago Hospital Council, the Chicago Hospital Association, the Infant Welfare Society of Chicago, and the diocesan Catholic hospitals. This committee is continuing the work of the Maternal Welfare Committee of the Chicago Gynecological Society. The maternal and infant mortality in Chicago and Cook County has been materially reduced in the past four years. It is the hope and object of the joint committee to further reduce the number of avoidable infant and maternal deaths in Cook County.

Dr. Fred L. Adair, chief of staff of the Chicago Lying-in Hospital, was elected chairman, Dr. Edward L. Cornell was elected secretary and Arnold F. Emch, director of the Chicago Hospital Council, was appointed executive secretary to the Committee, with headquarters in the offices of the Chicago Hospital Council at 105 West Adams Street.

"Comprehensive recommendations and requirements for obstetrical practice and hospital care of maternity and newborn patients are being drafted by this Committee," said Dr. Frank Maple, secretary of the Chicago Medical Society, "and it is the intention of this Committee to back up these recommendations with the full power and support of the cooperating organizations and societies."

The Committee includes the following well-known physicians and hospital experts, Dr. Fred L. Adair, Dr. Malcolm T. MacEachern, Dr. Edward L. Cornell, Dr. Ralph A. Reis, Dr. Frank F. Maple, Dr. C. C. Rentfro, Dr. Herman N. Bundesen, Dr. Luella Nadelhoffer, Dr. Herman Smith, Dr. Joseph L. Baer, Dr. Robert J. Hawkins, J. Dewey Lutes, Clinton Smith, Herman Hensel, Rev. John W. Barrett, and Arnold F. Emch.

SAN FRANCISCO AMERICAN MEDICAL ASSOCIATION MEETING

June 13-17, 1938

Members should write today if they contemplate attending the American Medical Association meeting in San Francisco this June and obtain their hotel reservations. See recent issues of the Journal of the American Medical Association giving list of San Francisco hotels and rates. Send in your requests to Doctor Frederick C. Warnshuis, 450 Sutter Street, San Francisco, California, giving names of members of your party, type of accommodations desired, rates, date of arrival and departure.

The San Francisco Session promises to be an outstanding one by reason of the scientific program, scientific and technical exhibits and the social functions. In addition there is the lure of California with its scenic beauty, majestic mountains, fertile valleys and historical background. An opportunity presents to combine profit

of the program with the pleasures of visiting San Francisco, the Golden Gate City with the two bridges, engineering wonders of the world.

Come by train, boat, auto or plane—no matter how—but come. Your visit will ever be one of pleasant memory. San Francisco and the bay area medical profession anticipate the pleasure of being your hosts and cordially invite you to come to the San Francisco Meeting.

Watch the Journal of the American Medical Association for program features and events.

1938 AMERICAN MEDICAL ASSOCIATION MEETING—SAN FRANCISCO

When San Francisco was selected as the host city for the 1938 Annual Session of The American Medical Association, the profession of this Golden Gate Metropolis promptly initiated plans for the comfort, pleasure and entertainment of all who come to that national meeting. A local executive committee on arrangements composed of five members with Doctor Howard Morrow as General Chairman and Doctor Frederick C. Warnshuis as General Secretary, and eighteen subcommittees have been busy since July in developing plans and local arrangement details. Their objectives are the biggest, best, and most memorable annual session in the history of the American Medical Association.

Atlantic City, Kansas City, Cleveland, Detroit, with their known facilities and attractions have been host cities in recent years, and have justified their selection as meeting places. However, and without disparagement, none of them possess the background, the setting, the resources, the history and romance, or the facilities that are found in San Francisco and in the great state of California—the Golden Bear Empire of the Pacific Coast. To reveal these, to extend California's and San Francisco's noted hospitality, and to cause those who plan to attend the 1938 session to experience ten days of profit and pleasure midst the environs of the annual meeting city, is the goal toward which the local profession is pointing.

The Local Committee on Arrangements cordially invites the profession of the country to be San Francisco's guests this coming June. Decide now to attend the 1938 American Medical Association Meeting and plan accordingly. During the coming months an insight to some of the feature functions will be disclosed, but the final details and program of events will not be revealed until you arrive. You will long regret it if you fail to attend the coming national meeting. Talk it over tonight with the good wife and your professional associates, and join the party of your state members that is coming to San Francisco—June 12 to 17, 1938.

AMERICAN MEDICAL GOLFING ASSOCIATION MEETING AT SAN FRANCISCO

The American Medical Golfing Association's Twenty-Fourth Annual Golf Tournament will be held in San Francisco, California, on Monday, June 13, 1938, at

the San Francisco Golf and Country Club.

The San Francisco Golf Committee, appointed by General Chairman Howard Morrow, is composed of James W. Morgan, Chairman, Ernest D. Chipman, George A. Gray, George McClure, and William G. Moore. Drs. James Eaves and Walter Schaller, past presidents of the A. M. G. A., are Honorary Members of the committee.

A "Golfers Special" to the A. M. A. Meeting is being sponsored by the American Medical Golfing Association. Six games of golf have been arranged on the trip to the Coast, in New Orleans, Houston, Galveston, San Antonio, Los Angeles and Del Monte; and three on the return journey through Portland, Seattle, Vancouver, Lake Louise and Banff.

Non-golfers as well as golfers, and their ladies, are welcome on the "Golfers Special."

For full particulars on the A. M. G. A. Tournament or the "Golfers Special," write the President of the A. M. G. A., Dr. Walt P. Conaway, 1723 Pacific Avenue, Atlantic City, New Jersey; or Bill Burns, Executive Secretary, 2020 Olds Tower, Lansing, Michigan.

SOCIAL HYGIENE DAY

National Social Hygiene Day, the second observance of which has been set for February 2, 1938, by the American Social Hygiene Association, marks the high point in the year round effort to gain popular interest and support for the activities of the health authorities and the medical profession in dealing with syphilis and gonorrhea. Interested official and voluntary agencies concentrate their efforts at this time on giving the subject the widest possible publicity, by arranging for meetings of interested groups, press stories and comment, appropriate radio broadcasts, and the like.

The first National Social Hygiene Day, February 3, 1937, was an immediate success in accomplishing its purpose: it was marked by hundreds of meetings held throughout the country. More than a thousand newspaper clippings coming from all parts of the country testify to its uniformly favorable press.

"Stamp Out Syphilis—Enemy of Youth" is the slogan for the 1938 Social Hygiene Day meetings. Particular emphasis will be laid on the control of syphilis among the twenty to thirty year age group, in which more than half of all new infections occur.

Suggestions for meetings and practical community programs may be obtained from the American Social Hygiene Association, 50 West 50th Street, New York City. The Association will be glad to supply interested persons and groups with materials, such as exhibits, films, and literature.

INTERNATIONAL MEDICAL POSTGRADUATE COURSES IN BERLIN

In spring of 1938, the following international medical postgraduate courses are prospected:

1. Constitutional pathology and clinical medicine. At: I. Medical University Clinic of the "Charité." (From 21st to 26th February.) Fee: 50.--RM.

2. Frequent mistakes in the diagnosis and treatment of internal diseases and their avoidance. Taking place at: II. Medical University Clinic of the "Charité." (From 28th February to 5th March.) Fee 50.--RM.

3. Postgraduate course on nourishment for healthy and sick. (From 7th to 12th March.) Fee: 50.--RM.

4. Course on tuberculosis. At: Berlin Municipal Hospital for Tuberculosis. (From 14th to 19th March.) Fee: 50.--RM.

5. Postgraduate course in diseases of the ear, nose and throat in the University Clinic for Diseases of the Ear, Nose and Throat to the "Charité." (From 28th February to 12th March.) 150.-- and 100.--RM respectively.

6. Postgraduate course for surgeons in the Chirurgical University Clinic of the "Charité." (From 25th to 30th April.) Fee: 70.--RM.

7. Postgraduate course for oculists in the University Ocular Clinic. (From 21st to 26th March.) Fee: 75.--RM.

8. Recent results in the field of the ray-therapy. (From 2nd to 7th May.) Fee: 60.--RM.

9. Propaedeutic respectively additional training course in homeopathy. (From 25th April to 21st May.) The course is divided into two parts. The fee for part one is 25.--RM; for both parts together 75.--RM. Part two can be taken independently from part one at a fee of 50.--RM; for assistant doctors 15.--, 40.-- and 30.--RM respectively.

10. Special courses in all branches of medicine with practical work at the bedside and in the laboratory, to be held every month. For these courses participants are requested to communicate their wishes in order to find a complete program on their arrival.

Courses 1 to 9 will be held in German, and the special courses also in foreign languages.

For programmes and further information apply to the Geschäftsstelle der Berliner Akademie für ärztliche Fortbildung, Berlin, NW 7, Robert-Koch-Platz 7 (Kaiserin Friedrich-Haus).

Foreign doctors and German doctors resident abroad are granted a reduction of fare of 60% on the German Railways Company's lines; a foreign doctor can reduce the cost of his stay considerably by utilizing what are called "registered marks"; it is advisable to arrange matters with the local bank before starting.

ANTI-FILLED MILK LAW UPHELD BY U. S. APPELLATE COURT

The United States Circuit Court of Appeals, Seventh Circuit, sitting at Chicago, in an unanimous opinion, filed December 2, upheld as constitutional the Federal Anti-Filled Milk Act. At the same time the Court upheld the decision of Federal District Judge Holly dismissing the suit of the Carolene Products Company against the Evaporated Milk Association and its officers, charging conspiracy to restrain the Carolene Company from shipping filled milk in interstate commerce.

This is an important victory in the fight against this

grave menace to the dairy industry—the substitution of coconut oil for butter fat in dairy products. This decision undoubtedly will have a far reaching effect in sustaining all existing and future filled milk laws.

Three Federal Judges ruled that since the Carolene Company is admittedly engaged in interstate commerce in filled milk, which is skim milk mixed with coconut oil, in direct violation of the federal law, the essential question was the constitutionality of the Act. This being established, the manufacturers of "Carolene" and "Milnut" came into court as law violators and not entitled to relief in the courts.

Filled milk is prepared by extracting butter fat from milk and replacing it with coconut oil—a substance produced by cheap oriental labor. The forced sale of the extracted butter fat serves to demoralize the butter and cream markets, thus depressing the prices paid to farmers for their milk. As another unfortunate economic consequence the farmer is forced to a lower standard of care in producing and handling milk, again affecting adversely the consumer interest.

NAVY MEDICAL CORPS EXAMINATION

An examination of candidates for appointment as Lieutenant (junior grade), in the Medical Corps of the Navy, will be held at all Naval Hospitals in the United States and at the Naval Medical School, Washington, D. C., beginning May 16, 1938.

Candidates for admission must be between the ages of twenty-one and thirty-two years at time of appointment, graduates of Class "A" medical schools, and have completed an internship of one year in a hospital accredited for interns by the American Medical Association and the American College of Surgeons.

Those who are interested should write the Surgeon General, U. S. Navy, Bureau of Medicine and Surgery, Navy Department, Washington, D. C., for further information in regard to the examination and the procedure to follow for them to appear before one of the Examining Boards.

A RECENT RELEASE FROM THE PARKE DAVIS COMPANY LABORATORY CONTAINED THE FOLLOWING VALUABLE INFORMATION

In the past epidemic cerebrospinal meningitis has regularly been fatal in from one-third to one-half of those attacked; in some epidemics the death rate has been even higher. In this dread disease a reduction of mortality rate to 6.3 per cent, in face of an epidemic characterized by fulminating infections, is a remarkable achievement.

In the spring of 1936, an epidemic of meningitis broke out in the mining town of Lynch, Kentucky. The report of Petty (Kentucky M. J. 35:180, 1937) on the handling of this epidemic in a community of approximately 10,000 persons will be of interest to all physicians. By rigid quarantine of exposed cases and the ferreting out and isolation of carriers, the epidemic was brought under control; by early diagnosis and use

of Meningococcus Antitoxin the astounding mortality rate of 6.3 per cent was achieved. Ninety-five cases occurred in the town of Lynch; only six of these died. Thirteen cases occurring in the surrounding country, and brought into Lynch for treatment, did not have the benefit of early diagnosis and antitoxin treatment. The mortality rate in this group was 38.4 per cent. In each of the 108 cases, diagnosis was made tentatively on the finding of a cloudy spinal fluid under increased pressure; diagnoses were subsequently confirmed by culture of the spinal fluid.

Original clinical tests of meningococcus antitoxin were performed in the Cook County Hospital, Chicago, by Dr. Archibald L. Hoyne. In several reports (J. A. M. A. 104:980, 1935, Arch. Pediat. 53:164, 1936, Illinois Med. J. 68:307, 1936, J. A. M. A. 107:478, 1936, Nebraska S. M. J. 21:321, 1936) Hoyne showed clearly that use of Meningococcus Antitoxin had more than halved the mortality in meningococcic meningitis; in one series of 31 patients treated solely by the intravenous route, mortality rate was 6.4 per cent, a figure which contrasts very favorably with the previous 19-year mortality rate of 50.6 per cent.

Clyde and Neely report (Alabama M. A. J. 6:227, 1937) that from January to June, 1936, twenty-one cases of epidemic cerebrospinal meningitis were reported in Jefferson County, Alabama. Ten of these patients received Meningococcus Antitoxin with recovery in all cases. Details of treatment in the remaining eleven cases are not known, but the mortality rate of 72.7 per cent (eight deaths) is eloquent of the inadequacy of whatever treatment was given. Of the ten patients who recovered, one had residual deafness and one was partially deaf. No other complications were observed and no serious reactions to antitoxin therapy appeared. Seven cases had serum sickness. As a result of their experience, Clyde and Neely state that all future cases of meningococcic meningitis will receive all antitoxin injections intravenously and that lumbar puncture will be performed only for diagnosis and relief of increased intracranial pressure.

Many authors, including Platou (J. Lancet 56:283, 1936), Karel (Northwest Med. 35:48, 1936), Levinson (Mississippi Doctor 14:9, 1936), Tucker (Illinois M.J. 71:328, 1937), Webb (Tri-State M.J. 9:1994, 1937), Brocklebank (Brit. M.J. 3981:857, 1937) Hodges and Shields (Kentucky M.J. 35:464, 1937) and others, give clinical proof of the effectiveness of this outstanding advance in the field of serotherapy.

STRETCHING THE TRUTH

A fisherman got such a reputation for stretching the truth that he bought a pair of scales and insisted on weighing every fish he caught, in the presence of a witness.

One day a doctor borrowed the fisherman's scales to weigh a new-born baby. The baby weighed 47 pounds.

ULTRA-violet rays help form Vitamin D, and exert a beneficial effect on the health. Sunshine is best, but in winter, the quartz lamp is a good substitute, never equalling sunshine itself.

Original Articles

VALUE AND LIMITATIONS OF ENCEPHALOGRAPHY IN CHILDREN

ABRAHAM LEVINSON, M. D.

Assistant Professor of Pediatrics, Northwestern University Medical School; Attending Pediatrician, Children's Hospital of the Cook County Hospital; Attending Pediatrician, Sarah Morris Hospital for Children of the Michael Reese Hospital; Attending Pediatrician, Mount Sinai Hospital.

CHICAGO

Encephalography is the visualization of the brain by x-ray following the injection of air or other gases into the lumbar subarachnoid space.

If someone had predicted even as late as the beginning of the 19th century that the brain could be visualized he would have been considered either insane or a miracle man. This feat, however, has been accomplished thanks to the work of Cotugno who discovered cerebrospinal fluid, of Quinke who described spinal puncture, of Roentgen who discovered x-ray and finally of Dandy who described encephalography. The method has now been in use long enough to stop and think not only of its usefulness but also of its limitations.

Indications. Encephalography is done mainly for diagnostic purposes to determine the presence of a fixed brain lesion such as hydrocephalus, cortical atrophy or new growth. It is thus indicated in the following cases:

1. Mental retardation with or without paralysis believed to be due to (a) intracranial hemorrhage at birth, (b) cerebral agenesis, (c) encephalitis.

2. Chronic convulsions due to the above causes or to epilepsy.

3. Neurologic symptoms due to brain tumor. Encephalography in these cases may furnish not only diagnostic information but also prognostic, namely as to whether it is worth while to treat the patient or whether his condition is hopeless.

Encephalography has also been used for therapeutic purposes to facilitate drainage in acute meningitis and to break up adhesions in cases of Little's disease, chronic meningitis and epilepsy. It should be remembered, however, that enceph-

alography is a surgical procedure and should be done only when absolutely necessary.

With very few exceptions, encephalography is preferable to ventriculography mainly because of the high mortality following ventriculography.

Contraindications. The most important contraindications to encephalography are (a) brain tumor in the posterior fossa, as there is a possibility of herniation of the brain with pressure on the medulla, (b) a very high cerebrospinal fluid pressure in patients suffering from chronic brain disturbances, if the pressure cannot be brought down to normal by removal of cerebrospinal fluid, (c) an active infection anywhere in the body. It is particularly dangerous to do encephalography if the child has pneumonia, bronchitis or asthma.

At all times one must keep in mind the technical difficulties, the possibility of untoward symptoms and the difficulty of interpreting the x-ray plates.

Preparation of the Patient. I have made it a rule not to do an encephalography unless an x-ray of the skull has been taken, spinal and blood Wassermann or Kahn done, and eyegrounds examined. This has saved me a good deal of difficulty, particularly in connection with the interpretation. I also have the urine examined the day before and have the patient get an enema the night before and the morning of the encephalography. The latter is done when avertin is used.

I have also made it a rule to get an operative permit on all cases as I consider encephalography an important surgical procedure.

Technical Considerations. Attempts have been made to standardize the technic of encephalography. As yet, however, there is no standard technic.

Special apparati have been described for the introduction of air. An apparatus whereby each drop of cerebrospinal fluid is replaced by a drop of air would be ideal, but does not always work well.

A double lumbar puncture whereby the air is introduced in the upper needle and the fluid drops from the lower needle, is employed by some workers. The simplest way, however, is the use of a single needle, a three-way stopcock and a syringe. No special chair is necessary for encephalography in children.

From the Children's Hospital of the Cook County Hospital and from the Sarah Morris Hospital for Children of the Michael Reese Hospital.

Read before the Section on Radiology of the Illinois State Medical Society, May 18, 1937.

Numerous anesthetics have been used, ranging from morphin to avertin. I have used avertin in most of my cases, in doses of 80 to 100 mg. per kilo of body weight. Occasionally when the patient is idiotic I do it without an anesthetic.

Various gases such as oxygen, helium, ethylene and ether have been injected intraspinally for the visualization of the brain. Air still remains the easiest and cheapest gas to inject. The amount of air or other gas to be injected naturally depends upon the amount of cerebrospinal fluid one is able to remove. At times, as much as 200 cc. of fluid may be removed. As a rule, however, 75 to 100 cc. suffice for good visualization of the brain. In one case I obtained good encephalograms with 38 cc. of air.

I usually start the encephalography with the patient in the recumbent posture and measure the initial pressure with the manometer. After withdrawing 15 to 20 cc. of fluid I take the pressure again, then sit the patient up and take another pressure reading. The amount of air injected is a little less than the amount of cerebrospinal fluid removed. The air is introduced at no higher pressure than the original spinal pressure. I regulate that by a three-way stopcock with the pressure apparatus connected to one arm and the needle to the other arm of the stopcock. The head is shaken forward and backward and from side to side every time air is injected. If the cerebrospinal fluid becomes bloody, the encephalography is discontinued.

Plates are taken immediately after completion of encephalography and are repeated twenty-four hours later. I found that 24-hour plates are of great value as sometimes the accumulation of air is best shown at that time. The x-ray plates are taken first with the patient in the recumbent posture and then in the sitting position, four views being taken in each position: antero-posterior, postero-anterior, and two lateral.

Examination of the cerebrospinal fluid for cell count, Wassermann and Pandy suffice for clinical purposes. Cohn and I have studied the different portions of the encephalographic fluid, a report of which will appear in a separate communication.

Every one of our patients gets 300 to 500 cc. of normal saline by hypodermoclysis 2 to 3 hours following the encephalography. This is done to combat the dehydration resulting from the re-

moval of the cerebrospinal fluid. An enema following the x-ray in order to wash away all unabsorbed avertin we believe to be useful. Urine is examined the next day for red blood cells.

Untoward Symptoms. We have been fortunate in that no death occurred in any of our cases either immediately or even within 24 hours after the operation. One patient died two days later, but whether the death was due to encephalography is problematic. We have, however, encountered some untoward symptoms.

Vomiting was rather frequent during or after the encephalography.

Headache at times occurred at the beginning of the injection of air, as evidenced by an outcry even when the patient was under anesthesia.

Collapse occurred, evidenced by shallow respiration, sweating and slow pulse; the pulse dropping to 50, or even to 40 beats per minute and becoming irregular.

Elevation of temperature was the rule rather than the exception, the temperature often rising as high as 103.

Rigidity of the neck and other meningeal symptoms also occurred, within 10 to 24 hours after the encephalography.

One patient had an asthmatic attack during the encephalography and required adrenalin.

The urine at times contained red blood cells on the day following the encephalography.

The untoward symptoms usually disappear in 24 to 48 hours, and require no treatment. Collapse should be treated by caffeine. If the headache is severe, it may be relieved by removing some of the air.

Interpretation. The interpretation of the encephalogram is no easy matter. It is often hard to decide between improper technic, faulty filling of the ventricles and existing pathology. Subdural air is sometimes a misleading factor. Insufficient air is a frequent reason for the difficulty.

The first requisite for proper interpretation is a knowledge of the ventricular and subarachnoid system including the basal cisterna. In the antero-posterior view a normal encephalogram usually shows the lateral ventricles equal on both sides and of butterfly appearance. The third ventricle can be visualized as a narrow slit. The aqueduct of Sylvius can be visualized as a straight line and the fourth ventricle is diamond shaped. In the lateral view, the lateral ventricles

are easily visualized, the third and fourth somewhat less distinctly. The cortical subarachnoid spaces appear as pencil marking. The basal cisterna are visualized but are very small.

The changes most frequently seen in children are:

1. Dilatation of the ventricles. This occurs in practically all fixed brain lesions. The dilatation varies with the amount of obstruction to the circulation of the c. s. f. In congenital hydrocephalus the ventricles are enormously dilated. In acute meningitis and encephalitis the ventricles are greatly dilated. In other fixed brain lesions the dilatation is usually moderate.

2. Dilatation of basal cisterna. When the primary cortical pathways are blocked, damming back of the cerebrospinal fluid into the large basal cisterns occurs. Thus there may be a dilatation of the cisterna vena magna cerebri or of the cistern of the longitudinal sulcus, as well as of the pathways along the posterior half of the hemisphere.

3. Deformity of one ventricle, due to tumor.

4. Accumulation of air in subarachnoid space. This occurs when there is cortical atrophy due to any cause. It may be generalized or sacculated.

5. Obliteration of part or of all the subarachnoid space. This occurs in chronic arachnoiditis and in meningitis.

Changes in Various Pathological Conditions.

In cerebral birth trauma there is a dilatation of the ventricles and large quantities of air in the subarachnoid space, indicating localized cortical atrophy. (Figs. 1 and 2.) Sometimes there are worm-like air spaces in the cortex connected with the subarachnoid air. This we believe speaks for porencephaly.

In cerebral agenesis there is a dilatation of the ventricles and wide subarachnoid markings. It is not always easy to differentiate between cerebral birth trauma and cerebral agenesis. As a rule, however, localized subarachnoid air pockets speak for cerebral birth trauma.

In acute encephalitis there is dilatation of ventricles and very little air in the subarachnoid space. In chronic encephalitis or post-encephalitis there is cortical atrophy as indicated by widened subarachnoid spaces. The atrophy is usually diffuse, although some parts may be more atrophied than others. (Fig. 3.)

In epilepsy the changes vary according to the original cause. If due to cerebral birth trauma, cerebral agenesis or encephalitis the changes are those of the original disease. In idiopathic epilepsy the encephalogram is usually negative. At times, however, there is a dilatation of basal cisterna and occasional widening of subarachnoid spaces.

In brain tumor adjacent to the ventricles there may be a compression or deformity of one ventricle. In some cases there is a dilatation of

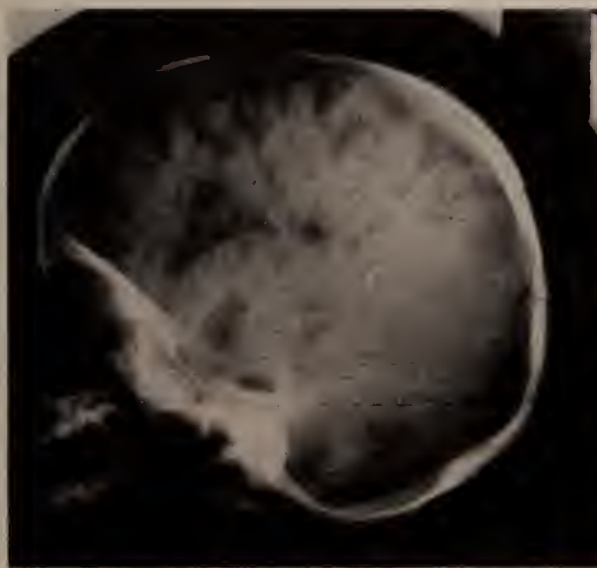


Fig. 1 (left) H. F., 15 months. Little's Disease. 46 cc. fluid removed, 38 cc. air injected. Marked cortical atrophy.



Fig. 2 (right) A. Same patient. P. A. view, showing left cortical atrophy.

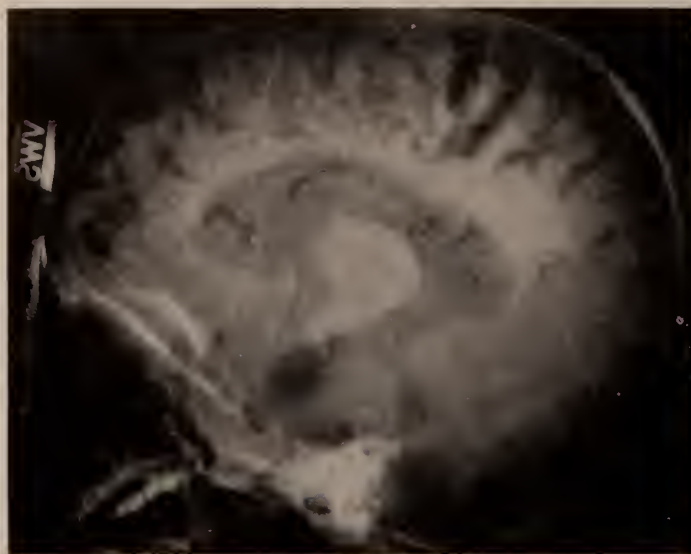


Fig. 3 (left) R. G., 14 months. Post encephalitis. 119 cc. fluid removed, 110 cc. air injected. Dilatation of all ventricles and marked cortical atrophy.



Fig. 4 (right) M. W., 18 months. Tuberculous meningitis. 150 cc. fluid removed, 140 cc. air injected. Marked dilatation of lateral ventricles.

the basal cisterna. If the tumor is not close to the ventricles or basal cisterna and if it does not cause any obstruction to the cerebrospinal pathways the encephalogram is entirely negative.

In arachnoiditis there is partial or complete obliteration of subarachnoid spaces due to adhesions.

In acute meningitis there is a marked dilatation of the ventricles varying with the stage of the disease. (Fig. 4.) This bears out the original contention of Robert Whyte who termed tuberculous meningitis acute dropsy of the brain. There is usually also an obliteration of the subarachnoid spaces due to the edema of the brain.

30 N. Michigan Ave.

DISCUSSION

F. H. Maurer (Peoria, Ill.): I came here as rather a student seeking some information as to the indication for and uses of this more or less recent development as an aid to diagnosis. I myself have not had the opportunity to do so many of these in my practice. I was glad to hear Dr. Levinson point out particularly the necessity for care in the use of this means of diagnosis, and I believe he also emphasized the fact that spinal punctures were not always of an insignificant nature. I believe spinal punctures have been done rather freely and many times uncontraindicated. I was pleased particularly to have him emphasize the fact that the doing of a spinal puncture without knowledge of the location of the tumor was a dangerous procedure.

I believe with the points Dr. Levinson has empha-

sized in the *modus operandi* of carrying this on we can go forward and use this means of diagnosis with much more ease and adapt it to our cases and get a good deal more information than we have had in the past.

M. A. Perlstein (Chicago): After hearing Dr. Levinson's paper, one might think encephalography a simple procedure, but when one attempts it, he finds a number of technical difficulties which have not been mentioned.

Among the indications for encephalography must be included the post-traumatic lesions resulting in epilepsies and psychoses. These do not occur very often in children but are probably the most frequent indication for encephalography in adults.

The technique of taking the plates has not yet been standardized. When taking plates with the patient in a horizontal position, it is usual to place the head over the plate, and the tube over the head, shooting from above. Let us say the patient is lying on the right side. By the above-mentioned technique we obtain a good picture of the right ventricle, whereas most of the air has risen to the left ventricle. It seems to me that if we wanted to get ideal plates, the plate should be placed over the child's head and the tube below so as to get a good delineation of that ventricle which contains most of the air.

In comparing plates taken immediately after encephalography with those taken 24 hours later, I have observed that the lateral ventricles appeared more distended with air in the latter. I have never been able to explain this observation.

The procedure of encephalography is rapidly becoming one of the diagnostic procedures in the armamentarium of the progressive pediatrician.

BRONCHOSCOPY IN BRONCHIAL ASTHMA

ALBERT H. ANDREWS, JR., M. D.

CHICAGO

The value of bronchoscopy in bronchial asthma is threefold: Namely, first diagnostic, second aspiration of secretion for vaccines, and third, therapeutic. Casselberry, Friedberg, Boot, McGinnis and Winters have discussed the diagnostic and vaccine value of bronchoscopy before this society, but Winters has been the only one to mention its therapeutic value.

The term bronchial asthma at least for the purpose of this paper does not include asthma as a complication of other diseases such as cardiac or cardiovascular renal diseases, but it does include asthmatic bronchitis when that term is used to denote asthma associated with an acute or chronic bronchitis.

Bronchoscopy is of diagnostic value in bronchial asthma because it is a means toward diagnosing the type of tracheobronchial changes and in differentiating asthma from other conditions. The asthmatic wheeze may be produced by any bronchial obstruction as Jackson has demonstrated, and therefore great care is necessary to prevent the diagnosis of bronchial asthma when the condition is some other disease in such a stage that an asthmatic wheeze is produced. The nature of such a wheeze is usually revealed by a thorough history and physical and laboratory

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Read before Section on Eye, Ear, Nose and Throat of the Illinois State Medical Society, Peoria, May 18, 1937.

AGE AT ONSET AND RESULTS

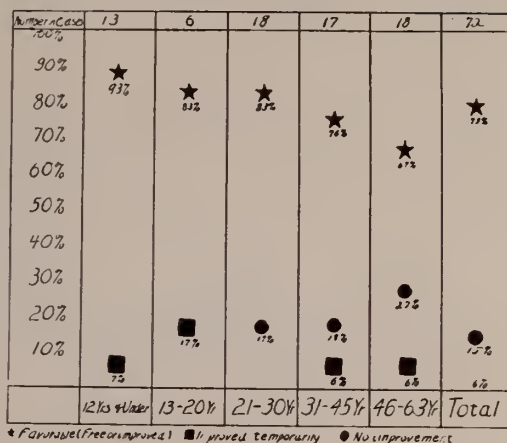


Chart 2.

examination, however, there will still be found patients with an asthmatic syndrome but not a characteristic bronchial asthma and it is in this type of case that diagnostic bronchoscopy is of particular value. In children bronchoscopy is of even greater value because of the always present possibility of a foreign body. Jackson has reported 38 cases of foreign bodies in the air and food passages which had been erroneously diagnosed as bronchial asthma. A number of cases of bronchiogenic carcinoma present asthmatic symptoms and here again the bronchoscope and biopsy stand supreme in the earlier diagnosis.

The value of bronchoscopic aspiration vaccines has been demonstrated repeatedly to be superior to sputum vaccines. The reason for this is probably due to the lack of oral contamination and the more accurate determination of the predominating pathogenic organisms. In babies and younger children it is practically impossible to obtain an adequate specimen of sputum, so bronchoscopy is particularly applicable. Van Loon has recently reported a series of 18 cases of bronchial asthma in children from 3 to 12 years of age treated bronchoscopically. All of the cases were associated at the onset with a respiratory infection or acute exanthemata. One was unimproved, four were almost cured and seven were symptomatically cured with no recurrence. Van Loon considers the use of bronchoscopic vaccines to be essential for the ultimate symptomatic relief. Asthma in childhood is a difficult therapeutic problem and especially so in that type which is sometimes called asthmatic bronchitis and is characterized by recurrent at-

AGE OF PATIENTS AND RESULTS

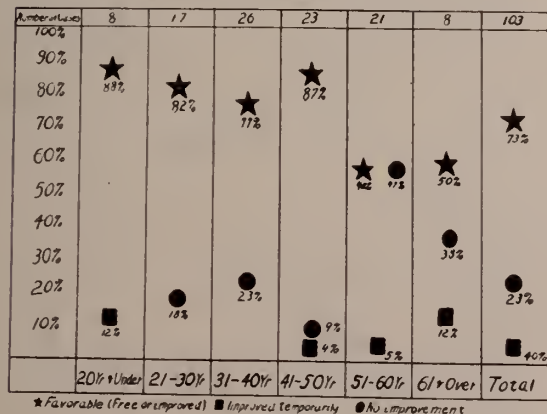


Chart 1.

the increased thickness of the walls but also by the increased power of the bronchial musculature.

Moore, in 1925, observed collapse of the trachea and larger bronchi. This finding is not constant and may occur normally in some patients. The mechanism which causes this collapse is not known, but it is thought to be due to the increased peripheral intrapulmonic pressure. In accordance with this conception, the collapse is not significant in the production of the obstructive dyspnea but is rather a passive response and due to the weakness of the tracheobronchial walls. However, Lukens has suggested that it may be the cause of the extreme dyspnea in some patients.

Bronchitis in bronchial asthma is practically a constant finding. The allergic reaction of the respiratory mucosa is undoubtedly similar throughout the respiratory tract except as modified by its local peculiarities. The bronchitis in the uncomplicated, paroxysmal, interval-free type of bronchial asthma is minimal and is probably entirely allergic. This type of patient usually coughs up clear mucoid secretion as the acute asthmatic attack subsides. This type of bronchitis is rarely seen by the bronchoscopists because it responds well to the usual methods of the asthma treatment. As the bronchial asthma becomes worse or its duration is prolonged, a chronic bronchitis develops along with a pulmonary emphysema.

The swelling of an acute allergic bronchitis and the thickening of a chronic bronchitis along with the increased secretion causes a reduction in the size of the lumen. This reduction is relatively greater in the smaller bronchi than in the larger, and the area of obstruction is therefore beyond the vision of the bronchoscopist. The bronchi are constantly changing in size and shape during respiration, being larger during inspiration and smaller during expiration. Therefore this obstruction would be functionally greater during expiration.

Another factor which must be taken into consideration in the production of bronchial asthma is pulmonary atelectasis. Clarke and Tucker have observed this complication in three cases. Relief was obtained in two cases by bronchoscopic aspiration of considerable quantities of obstructing secretion. Clarke believes that small areas of atelectasis are not uncommon in bronchial asthma

and that this atelectasis may explain some of the more severe asthmatic paroxysms.

Probably no one of these mechanisms is predominant in the production of bronchial asthma but rather a combination of these and perhaps others of which we are not cognizant at the present time. The reflex phase received considerable emphasis some time ago but apparently is not considered so important today.

Mechanism of Bronchoscopic Relief. The methods by which bronchoscopy relieves bronchial asthma may be listed as follows: removal of secretion, stretching and dilatation of the bronchi, breaking into the vagus reflex arc, application of drugs and in perhaps other ways.

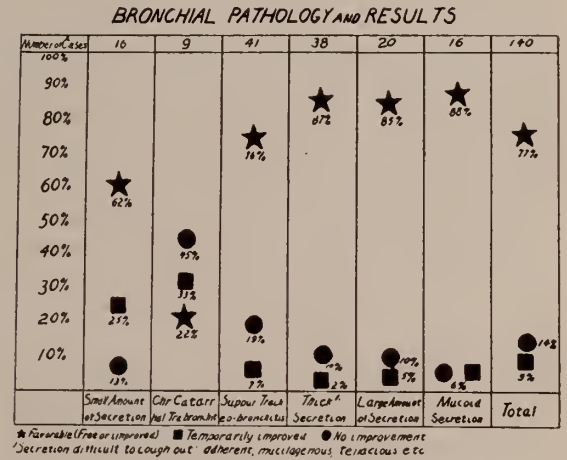


Chart 5.

Aspiration of secretion is probably the most significant mechanism. The secretions which are blocking the airway and are of such a nature that they can not be removed by cough and ciliary action are aspirated. The removal of these secretions aids the defensive and reparative processes of the mucosa causing an improvement in the bronchitis with subsequent lessening of the secretions. In those cases complicated by pulmonary atelectasis aspiration of the obstructing secretions causes an improvement in the atelectasis and the asthma. In those cases of intrinsic bacterial asthma due to a bronchitis, aspiration not only has a favorable effect upon the bronchitis but in addition removes a considerable amount of the offending allergens to which the patient is sensitive and in this way perhaps also improves the asthma.

Some asthmatic patients are temporarily improved by almost anything that is done to them;

the psychological effect being apparently predominant. In this regard bronchoscopy should have a wonderful effect. Upon the other hand, the stretching of the bronchi, extreme stimulation of the mucosa and the local anesthetic may break the vagus reflex arc sufficiently to prevent its reestablishment for varying lengths of time and in that way have a favorable effect on the asthma.

The bronchoscopic applications of cocaine, adrenalin, silver nitrate, bland oils, sodium bicarbonate and other drugs have been used extensively. The earlier writers considered these applications to be of considerable value but the present conception seems to be that they do not materially effect the response to bronchoscopy. Proetz, and Lierle and Moore have demonstrated that 10 to 20% cocaine solution and 0.5% silver nitrate solution have a detrimental effect upon the cilia of the nasal epithelium. Therefore these drugs should be used cautiously in the tracheo-bronchial tree because they may impede pulmonary drainage by stopping the ciliary action.

Results of Bronchoscopic Therapy. Bronchoscopic therapy is not intended to influence the basic allergic diathesis of the patient. It is therefore a symptomatic method of treatment and is only an adjunct to the allergic management and treatment. An exception to this might be those cases of intrinsic bacterial allergy of bronchitic origin in which bronchoscopy would have a therapeutic effect on the etiological bronchitis.

A survey of the literature has been made and

all of the cases of bronchial asthma which have been bronchoscoped and individually reported have been charted and analyzed according to age, age of onset, duration, etiology and bronchial pathology. The response to bronchoscopy has been classified as favorable, temporarily improved, or no improvement. Those cases which were reported as free or improved without relapses or with relapses which responded to further bronchoscopic therapy are classified as a favorable response.

The purpose of this survey is to compare the response to bronchoscopic therapy with the various factors just mentioned. These cases have all been taken from the original reports and only the factors specifically mentioned in each report have been tabulated. All of the cases had had other methods of treatment unsuccessfully.

One hundred and forty-eight cases were charted and 135 of these were suitable for this study. Ninety-eight or 73% obtained a favorable response. Twelve or 8% were improved temporarily and 25 or 19% were not improved. (Table 1.)

Table 2 shows the cultures of the bronchoscopic aspirations and generally confirms similar investigations.

Chart 1 shows the results by age with definitely poorer response beyond the age of 50. The age group 20 years and under does not contain a significant number.

Chart 2 shows a poorer response as the age of onset is later in life.

Chart 3 shows a lessening of the favorable results as the duration of the disease increased and some improvement in the response in those patients with the disease 16 or more years. It is interesting to note in this connection that those patients who had had asthma for more than half of their lives (11 out of 67 patients), had a 100% favorable response.

Chart 4 shows that those patients whose onset of the asthma was associated with an acute infectious disease had a better response than those with other etiological factors.

Chart 5 shows that patients with a chronic catarrhal tracheobronchitis responded less than any other type of patient to bronchoscopic therapy. Those patients with scanty secretion responded poorly while those with definite secretion, no matter what the type, responded distinctly better.

TABLE 1. RESULTS OF BRONCHOSCOPIC THERAPY

Total Number of Cases—148			
Diagnostic only	8	Favorable	98 73%
Bronchoscopic therapy not indicated	5	(Free or improved) Improved temporarily	12 8%
Revised Total	135	No improvement	25 19%

TABLE 2. PATHOGENIC ORGANISMS IN BRONCHOSCOPIC ASPIRATIONS

Number of Cases Reported—35			
Strep. viridans	20 57%	Staph. Aureus	9 26%
Hemolyticus	6 17%	Albus	3 9%
Communis	2 6%	Hemolytic	4 11%
Micrococ. Catarrhalis ..	8 23%	Pneumococcus	7 20%
Cinereus	2 6%	B. Influenzae	1 3%
One organism	13 37%		
Two organisms	16 46%		
Three organisms	6 17%		

TABLE 3. RESULTS OF BRONCHOSCOPIC THERAPY DURING ACUTE ATTACKS

Total number bronchoscoped	13		
Relieved	12	92%	
Temporarily worse then unchanged	1	8%	

In summarizing: the factors which indicate a more favorable response to bronchoscopic therapy are younger patients, shorter duration, earlier age of onset, onset associated with acute infectious disease and with secretion which is purulent, mucoid, large in amount or difficult to cough up.

Table 3 shows relief to have been obtained by bronchoscopy during acute asthmatic attacks in 12 out of 13 cases. The unimproved patient was worse for 12 hours and then improved to the condition prior to bronchoscopy.

These results of bronchoscopic therapy indicate that there are certain conditions occurring in bronchial asthma which indicate the degree of response to bronchoscopic therapy. The following diagnostic classification of bronchial asthma has been arranged in order to show these conditions.

DIAGNOSIS OF BRONCHIAL ASTHMA

- Etiology
 - Allergy
 - Extrinsic
 - Intrinsic
 - Tracheobronchial
 - Infection elsewhere
 - Undemonstrable allergy
 - Onset associated with infectious disease
- Pathology
 - Tracheobronchitis
 - Minimal or allergic
 - Chronic catarrhal
 - Suppurative
 - Secretion difficult of removal
 - Pulmonary emphysema

The determination of the type of secretion present in the tracheobronchial tree prior to bronchoscopy is difficult because the secretion in the patients who respond well is of such a nature that it is inadequately removed spontaneously by coughing. The type of secretion which these patients expectorate is frequently much different from the secretion as it is observed bronchoscopically. On several occasions patients have been observed to expectorate a whitish clear mucoid sputum and on bronchoscopy a few minutes later dirty grayish mucoid globules adherent to the tracheal mucosa were observed. Quite a few of the patients who respond well to bronchoscopy notice a sensation of tightness, or constriction or obstruction in the chest before an attack starts. Usually if these patients are bronchoscoped before the attack starts it does not occur and the sensations are relieved by the aspiration. Many of these patients will return for bronchoscopy

on their own accord because they know an attack is imminent and can be prevented by bronchoscopy.

Technique of Bronchoscopy in Asthma. Bronchoscopy should be considered the final phase in the examination of the asthmatic patient and therefore it should be preceded by a complete examination including history, physical, allergic, x-ray, urinary, blood, sputum and otolaryngological examinations.

The technique of bronchoscopy is essentially the same for asthmatic patients as for other types. The principles of bronchoscopy as laid down by Chevalier Jackson should be applied to this type of work. The examination and stimulation by the anesthetic of the pharynx and larynx will in some patients precipitate an acute asthmatic attack, therefore it is best to precede the anesthetization by an appropriate dose, usually 0.5 cc. in adults, of 1-1000 epinephrine solution administered subcutaneously. The anesthetic being used for these patients now is 2% pontocaine. The possibility of the patient being sensitive to the anesthetic always must be taken into consideration.

SUMMARY

The value of bronchoscopy in bronchial asthma is diagnostic, obtaining secretions for vaccines and therapeutic.

The bronchoscopic findings, pathological physiology and mechanism of relief by bronchoscopy are discussed.

Of 235 cases reported in the literature 78% obtained a favorable result, 3% were temporarily improved and 17% were not improved; 135 of these cases were individually reported and the results were analyzed according to age, age of onset, duration, etiology and tracheobronchial pathology.

The conditions which indicate a more favorable response are an onset associated with an infectious disease and secretion difficult of spontaneous removal.

The conditions which indicate a poorer response are a small amount of secretion and a chronic catarrhal tracheobronchitis. The results are also poorer as the age of the patients and duration of the asthma increase.

A diagnostic classification of bronchial asthma is presented which includes these conditions which effect the response to bronchoscopic therapy.

The place of bronchoscopy in the treatment of bronchial asthma and the technique of bronchoscopy in asthma are discussed.

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DISCUSSION

Dr. Leon Unger, Chicago: Dr. Andrews has handled this difficult subject in a very masterly fashion. He has shown us first, that bronchoscopy in bronchial asthma is valuable because it helps us in our differential diagnosis. Any method of examination that will help us separate the true allergic type of asthma from those other conditions which simulate it is welcome. Too often many allergy specialists, "allergists" if you will, forget that old saying of Chevalier Jackson that "all that wheezes is not asthma." Unfortunately, some men rely too much on the allergic work-up, including skin tests; some lack a good foundation in internal medicine and some lack experience in examining chests which are non-allergic. Bronchoscopy gives us a chance to lessen the percentage of our mistakes.

To me, bronchoscopy for diagnosis is indicated in those patients in whom there is no definite allergic background. I, therefore, believe in bronchoscopic examinations in asthmatics who have not had other allergic conditions, e.g., hay fever; who have no special family history for allergy; and who do not have a high percentage of eosinophiles in the sputum and in the blood; and, also, I like to bronchoscope our failures from allergic treatment. The bronchoscopy may show us, as Dr. Andrews pointed out, a hidden bronchial carcinoma or a foreign body.

Dr. Andrews did well to state that he does not wish to bronchoscope patients who have asthmatic symptoms because of a cardiac or cardiovascular renal disease. In such cases the procedure would be highly dangerous. It behooves all of us, then, who refer cases for bronchoscopy to be sure to examine our patients thoroughly. Such an examination should include a careful history, a thorough physical examination and examinations of the urine, sputum and blood, including a Wassermann test. In all suspected cardiac or renal cases an electrocardiogram and blood chemistry estimations should also be made.

Dr. Andrews states that the vaccines obtained from material aspirated during bronchoscopy are superior to those made from sputum. I would not be too dogmatic about this. It is granted, of course, that theoretically the bronchoscopic sputum should make a better vaccine or filtrate. Practically, however, I am not at all convinced that the vaccines obtained at bronchos-

copy give better *clinical* results than those made from sputum. Indeed, I am not at all convinced that an autogenous vaccine is any better than a good stock respiratory vaccine bought from a reliable pharmaceutical house. Are the good results which can often be obtained from autogenous vaccines specific? I doubt it. I believe with Rackemann that vaccine therapy is non-specific. If you give the patient a good-sized local reaction you are apt to obtain good clinical results whether you use an autogenous or a stock vaccine. I have used both methods.

I thoroughly believe with Dr. Andrews in the value of bronchoscopy in the treatment of some asthmatics. Any procedure is a good one that can pull out some of the sticky secretion which blocks the air passages. Of course, the aspiration must often be repeated. The patient usually feels better, at least for the time being. Too often he relapses; bronchoscopy should be tried several times, at least, in these obstinate cases.

The use of bronchoscopy is, therefore, invaluable from a diagnostic standpoint; it is of definite, though temporary, value in treatment; its value in obtaining better vaccines is questionable.

Dr. H. R. Watkins, Bloomington: This is an excellent paper and certainly is well presented. I like to think of bronchoscopy as an adjunct to the laryngologist, the pediatrician and the internist. Their patients come to us after they have exhausted their side of it and want our help. By the bronchoscope we can collect specimens for autogenous vaccine. If we can remove fixed secretions we are aiding ciliary action. Certainly it has a function of importance in bronchial asthma. The eosinophiles are found in the blood, in the sputum and in the bronchial wall. This has been proved at autopsy, and is not true of any other condition.

Dr. Harry Pollock, Chicago: I appreciated very much hearing Dr. Andrews' paper. It is worked out very thoroughly and shows he went into the subject very deeply. I have had many patients referred to bronchoscopy, and I should say 78% showed improvement, probably due to the better methods that have been used. Some years ago I presented a paper on suspension laryngoscopy, and we had many cases referred to us. We obtained excellent results due to the application of local anesthesia. We used cocaine and adrenalin applying it to the bifurcation. Some cases were free for from three to nine months. There is no question as to its value in diagnosis and for obtaining secretions, but I do not think we ever saw any cures from bronchoscopy, except in acute cases which probably would have cleared up by themselves. We often find that following bronchial asthma, and following the subsidence of the acute infection, the asthma clears up, but I think the results are due to the local anesthetic used. We had very excellent results at that time. I am also of the opinion that vaccines are not specific. If you use a stock vaccine you get as good results as with autogenous vaccine. Many years ago Dr. Beck and I made all our vaccines, and I do not think the results were any better than with stock vaccines. I do think bronchoscopy is most useful in diagnosis.

Dr. A. H. Andrews, Sr., Chicago: The average ear, nose and throat man considers his duty done when he eliminates the nose and throat as a cause of asthma. That is as far as I have gone, but I am glad that Dr. Andrews, Junior, has gone further. He seems to have wanted to extend his field in some direction which his dad had not gone, and so selected the field of bronchoscopy. We have found many cases of asthma with the cause in the throat or the nose, and I have always felt I had done my duty when I did what I could for that. But adding bronchoscopy to the nose and throat work has gone further, and developed many things I never considered in my field.

Dr. A. H. Andrews, Jr., Chicago (closing): I wish to thank the speakers for their discussion. Concerning the matter of vaccine, I did not mean to compare autogenous with stock vaccines. In the autogenous vaccine the thing to do is get the organisms and we thought we were getting them more accurately by bronchoscopic aspiration. We could go into that further but it does not warrant the time. The earlier workers along this line, principally Ephraim, who published 133 cases in 1911, put a good deal of emphasis on the use of various drugs, but the later workers seem to get similar results by bronchoscopic aspiration alone. We have used pantocaine to get away from cocaine in the bronchial tree. As Dr. Pollock pointed out the percentage of favorable results in this survey is surprising. Of course, it is frequently only a temporary method of treatment, but I am sure many of you could give case reports of patients who have not had a return of their asthma for years following bronchoscopic therapy. We are interested in being able to say which patient will be helped by bronchoscopy, and particularly so, if the results of previous treatment have been unsuccessful.

CLINICAL PROBLEMS IN DIABETES

ROBERT W. KEETON, M. D.

CHICAGO

Education of the Patient. The business world is rehabilitating its equipment. Old machines are being discarded or reconditioned. Efficiency is the watch word and the air is charged with the spirit of accomplishment. Hence it is not surprising to find a patient announcing in one breath that he has diabetes and demanding in another that this disorder be cured. At this point the educational battle begins. The physician assures the patient that the sugar can be removed from his urine if a certain plan is followed. The response is immediate. Do you mean that I am to live on a diet the rest of my life? His attention is called to the fact that he is already eating

From the Department of Medicine, University of Illinois Medical School.

Read before the Section on Medicine, Eighty-seventh Annual Meeting, Illinois State Medical Society, Peoria, May 18, 1937.

day by day the same foods with slight modifications. So after all a diet may not be such a great trial. From here the conversation moves along smoothly until the word "insulin" is used. Immediately comes the lightning response. "That is the substance that once you start you are never able to stop." After further conversation the patient demands in an authoritative manner, "Now doctor please be specific and tell me what am I to do, I really must be going along." There is just one answer to this question. "You must be educated in the nature of your disease and you must learn to live with it." All physicians know that this is the answer. However, some of the men are busy with other activities, they realize the difficulty of the task and are unable to see how this end can be accomplished. Others have seen or known diabetics, who have blundered along a number of years paying little attention to management and yet remained in apparent good health. Still others may have been inoculated with the impression which is abroad in some circles that one takes the new insulin (protamine) once a day and eats whenever hunger or appetite prompts him. These and other excuses are apt to present themselves to a doctor and justify him in his attitude that a diabetic may be treated rather liberally (loosely) and trust that "nature" will take care of any discrepancies that arise in his management. The difficulty with this view lies in the fact that nature has already deserted the patient. A defect has occurred within the machine, which is wrecking it. In most other diseases, the machinery is intact, but some extraneous agent (infection) has attacked it from without. This attitude is all the more regrettable since the management of diabetes has reached an exact science and there is little or no reason why a patient should die of it. Even under the best treatment a patient with diabetes may die from an attack of acute appendicitis, or he may die of a malignant pneumonia or a cerebral thrombosis, but he should in all of these situations be spared from death because his diabetes was inadequately or unskillfully managed. This type of death is preventable. Just as the responsibility for the cure of diphtheria increased with the advent of antitoxin so the responsibility for exact management of diabetes and the education of diabetics has been increased by the recent advances in our knowledge.

The Diet. Now that we have agents available

which will allow the individual to eat normally, there seems to be no further reason for singling him out and setting him up as a target for curious questions by making for him a fantastic diet in which the so-called "diabetic foods" are included. Food furnishes the body with energy and other ingredients necessary for its function. The food given should be adjusted to the patient's requirements. In short, the diet should be an optimal one. If the patient is overweight the calories should be reduced to bring his weight to a normal value. If he is underweight increased calories should be given. If he is a young growing individual sufficient protein must be available for the building of the body tissues. This raises the question as to what a doctor means when he asks the dietitian to serve a "diabetic diet." One might with equal propriety ask the coal merchant to send in a supply of winter coal. Before this can be done intelligently the type of furnace in the house, the number of rooms, the number of windows, the insulation and other facts have to be known. In both instances the problem is a quantitative one. The dietitian might send up a diet which had proven an excellent one for patient "A", but one which might be inadequate for patient "B". Suppose we analyze the method by which individual optimal diets are constructed.

In writing out a diet order a physician is writing a prescription for food. Dosage is a well understood obligation in a prescription for drugs, and it should be equally binding in a prescription for food. In selecting dosages of food the physician must make three decisions, the principles involved are not difficult to master. The physician must first decide the number of calories or the quantity of energy which he wishes to furnish the patient. Upon this factor depends the preservation of weight. He must next prescribe the amount of protein and finally the quantity of glucose. If the quantity of glucose is not known there can be no exact basis for ordering insulin or judging of the patient's progress. When these factors are known the dietitian can then fill the order and translate it into a diet. It would seem that any physician who proposes to treat diabetes or who is forced to treat such patients should acquire sufficient information to meet this requirement.

The conversion of this order into an acceptable diet requires knowledge of foods and falls in the

field of dietetics. In terms of the analogy of the prescription, the food prescription is filled by the dietitian just as the drug prescription is filled by the pharmacist. It is customary for the dietitian to educate the patient in these details. Intelligent cooperative patients soon become adept in judging quantities of food and making substitutions. It is this body of knowledge which terrifies the doctor, who is unaccustomed to this field. As a rule it is not advisable for the physician to undertake this educational work, because he will rarely give the necessary time to instruct his patients thoroughly. However, in almost every community where there is a hospital arrangements can be made for a small consideration with the dietitian or with some other diabetic, who has been previously educated, to do this work. However, I would like to urge upon all physicians an easy method of acquiring this knowledge. Work out for yourself an optimal diet order, have a dietitian translate this into a diet, purchase yourself food scales, and then with the assistance of your wife proceed to weigh all foods eaten and live rigorously on the diet. You will soon visualize 100 gms. of meat, 15 gms. of butter, 200 gms. of 10% fruit without difficulty. All of this knowledge can be acquired without attending a post-graduate course in diabetes.

Insulin. The body depends on insulin for the oxidation of glucose. We now have insulin available from three sources. There is the physiological insulin furnished by the patient's pancreas which is stimulated by absorbed glucose. In the normal individual this supply is adjusted to his requirements and is governed by the rate of absorption from the intestine. Within 30 minutes of the ingestion of glucose there is a maximal secretion of insulin and this quantity is sufficient to check the rise of blood sugar. At the end of $1\frac{1}{2}$ to 2 hours the quantity of insulin is sufficient to reduce the blood sugar to a level of hypo-glycemia and from this time onward the secretion of insulin subsides with the absorption. During the night there is an amount of glucose oxidized sufficient to support the fasting metabolism. When the patient has diabetes correspondence between supply and demand of insulin fails. The secretion of insulin is slow, the quantity below the requirements, and the response to the fasting night requirements is often absent.

The regular or standard insulin, which has been available since 1922, is rapidly absorbed and

withdraws at once the glucose from the blood stream into the tissue. Some of this insulin is apparently lost in the urine. The maximal effect of this insulin on the blood sugar is usually seen between the third and fourth hours, at which times reactions occur. The effect on oxidation usually disappears after 6 hours.

The protamine zinc insulin is absorbed uniformly over a period of 24 hours. Theoretically, an equal amount is absorbed in a unit time. Practically, the absorption is favored by the activity of the muscles which lie beneath the site of injection and other factors which have not yet been defined. The effectiveness of insulin from any of these sources is gradually augmented by activity providing it is kept below the point of exhaustion or fatigue. The problem therefore of keeping the urine sugar free and the blood sugar within normal limits would appear to be a complicated one. One wishes to match a fluctuating supply of glucose against a supply of insulin derived from three possible sources. It is obvious that the larger the quantity of physiological insulin which is available (in other words the milder the diabetes) the easier the task. Relatively mild diabetics can be kept sugar free easily by supplementing the varying physiological supply of insulin with a small dose of protamine. The protamine furnishes a supply of insulin for the night which is absent in the diabetic and augments his day insulin.

When the defect is more severe it is advisable to have the patient eat a larger number of meals and to eat less at a time. Three meals, a bedtime lunch, and a cup of tea at 4 P. M. are usually provided. In this manner there will be a more or less constant supply of food furnished during the waking hours. This intake is now balanced against a dose of both regular and protamine insulin and against as far as possible a constant degree of activity. The regular insulin lasts usually 6 hours and sometimes 8 hours. The day time activity supplements its effectiveness. The protamine insulin acting through the 24 hours, will keep the urine sugar free during the evening and night hours, when only small quantities of food are available, and bring the level of glucose dissolved in the body water (as represented by the blood sugar) to a normal value in the morning. In the day time considerable dependence has to be placed on the fluctuating supply of physiological

insulin. If this can be conserved and protected the management becomes much easier. The duration of action of these three types of insulin is pictured in Chart 1.

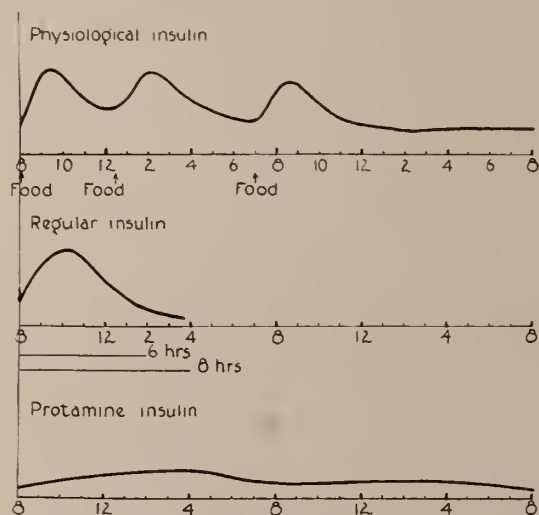


Chart 1. Variability and Duration of Action Different Types of Insulin.

In Chart 2 the behavior of the blood sugar throughout the twenty-four hours (fourteen estimations) is recorded in a patient with arteriosclerosis. On a glucose intake of 175 gms. the average urinary excretion was 4.5 grams. The individual urinary specimens showed small quantities of sugar. The blood sugar levels however remained high between 175 and 275 mgms.

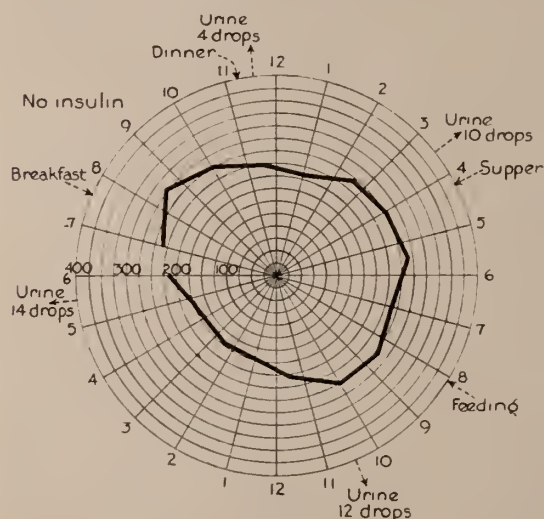


Chart 2. Arteriosclerotic Patient (A). Diet: Glucose 175 gms., Calories 1800.

In Chart 3 the blood sugar curve is shown when the patient had the same caloric intake

with a reduction of his glucose to 152 gms., a decrease of 23 gms. This was accomplished by a simultaneous increase in fat. On the new diet the urine showed an excretion of 2.7 gms. of glucose in 24 hours, a removal of only 1.8 gms. from his urine. The blood sugar levels remained uniformly high although the average was somewhat below that seen in Chart 2. This illustrates the behavior of an individual with a high renal threshold who desugarizes by diet adjustment, only when the restriction has been severe. If given the opportunity of eating freely he can burn large quantities of sugar.



Chart 3. Arteriosclerotic Patient (A). Diet: Glucose 152 gms., Calories 1800.

In Chart 4 the effect of protamine zinc insulin on the blood sugar is shown when the patient has

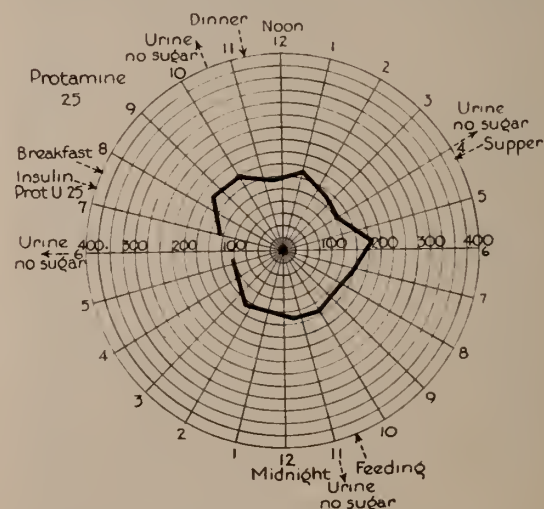


Chart 4. Arteriosclerotic Patient (A). Diet: Glucose 175 gms., Calories 1800. Protamine insulin 25 units.

been returned to the original diet containing 175 gms. of glucose. Twenty-five units of insulin have been given before breakfast.

Charts 5, 6 and 7 depicts the behavior of the blood sugar of a severe diabetic child, 12 years of age on a glucose intake of 200 gms. who was given first regular insulin and later regular and protamine insulin.

In Chart 5 two doses of regular insulin (25-0-20-0) were given. It can be seen that the control of the blood sugar is good between 11 A. M. and 1 A. M. After 1 A. M. the effect of the regular insulin has been lost and the patient's supply of physiological insulin is so low as to allow an elevation of blood sugar and an accumulation of sugar in the body fluids.

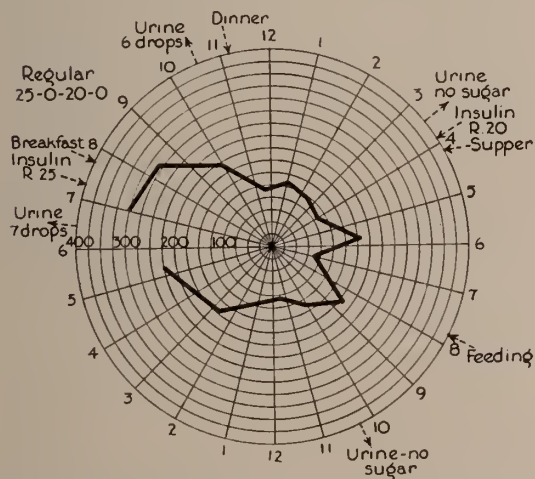


Chart 5. Young Diabetic (B). Diet constant. Insulin regular, 2 doses.

If this patient is to be controlled by the use of regular insulin the afternoon dose should be made smaller and a bedtime one introduced. If the evening dose is maintained at 20 units then a dose at 10 P. M. would cause a reaction around 1 to 2 A. M. When the evening dose (Chart 6) is reduced to 10 units and a dose of 5 units given at 11 P. M., the control is still inadequate but it is obvious that it can be accomplished by the slight increase of the afternoon and night doses.

These curves should be contrasted with the one (Chart 7) obtained by the use of protamine 25 and regular 10 given before breakfast. While the control of the blood sugar is not entirely satisfactory its improvement over the other adjustments, when regular insulin alone was used, is obvious.

The record of a third case (female, age 57), is

instructive, but space does not allow the publication of her blood sugar curves. She entered the hospital in acidosis and was rescued from this with the use of regular insulin. To keep her urine sugar free on a certain diet required four injections of insulin (35-15-20-15). She was then transferred to protamine and regular insulin. Her improvement was so striking that at the end of 5 weeks her blood sugar was under control with only 15 units of protamine insulin before breakfast.

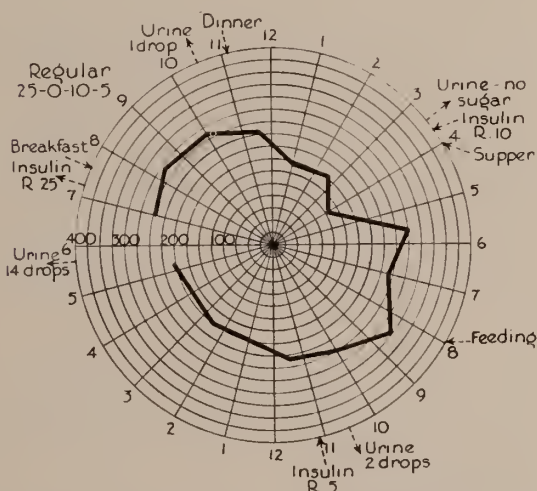


Chart 6. Young Diabetic (B). Diet constant. Insulin regular, 3 doses.

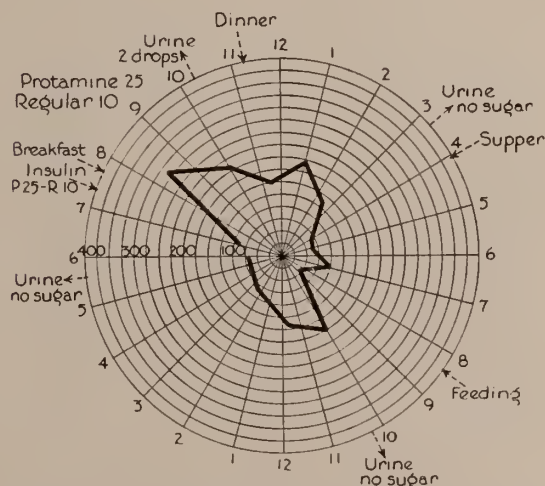


Chart 7. Young Diabetic (B). Diet constant. Insulin Protamine and Regular.

Difficult Clinical Situations. The doctor who sees an appreciable number of diabetics comes to recognize clinical pictures which reproduce themselves with striking faithfulness. A brief discus-

sion of the more troublesome ones will be undertaken.

Pellagra-Like Syndrome. There is first the apprehensive individual who reacts excessively to any emotional stimulus. He may find that he frequently has epigastric pain and consequently has to avoid coarse vegetables and raw fruits. There are at times fleeting attacks of diarrhea. In short the picture is that of an irritable bowel. This bowel reaction is found in well over 50% of diabetic patients whose disease is of any duration.

There are other patients, who have presented the picture described above for some time. They then observe the appearances of attacks of diarrhea of short duration which clear up spontaneously. As time passes these attacks become more and more frequent until a state of chronic diarrhea supervenes. They gradually lose weight, develop a dry skin and a sallow complexion. The number of bowel movements is unbelievably large. At night time the stools may be so frequent and occur with so little warning that the patient is reduced to a state of incontinence. They are truly pathetic. Bismuth is of little or no value, paregoric and powdered opium soon lose their efficacy.

The syndrome of irritable bowel is usually controlled by the methods adopted in non-diabetic patients. One may logically attribute the symptom to the high grade emotional instability seen in diabetic patients. However, when one sees the second picture of uncontrollable diarrhea it is obvious that some other explanation should be sought. This latter syndrome reproduces so faithfully that seen in pellagra that it is hard to escape the conviction that the mechanism of production is the same. Pellagra is attributed to a deficiency of B₂ (G) vitamin and it is cured by the administration of foods (brewers' yeast) rich in this fraction. More recently (Ramsdell and Magness; Ruffin and Smith) the value of intramuscular injections of liver extract No. 343 has been emphasized. Ruffin and Smith believe that the oral powdered liver extract is more effective. In our experience the intramuscular liver extract will slow up the diarrhea sufficiently to allow the oral administration of other sources of B₂. A few cases have been given the crystalline B₂ product intramuscularly. They have shown no significant improvement. This also

lends support to the view that we are dealing with a pellagra-like deficiency.

It is very helpful in these cases to remove as much of the fat as possible from the diet, replacing it with large quantities of protein, and to make the diet otherwise bland. When these measures are adopted the diarrhea can be controlled. Diarrhea is a disastrous process to the metabolism. One often does not appreciate the loss in calories, salts and protein occurring in this way. Once it is stopped the whole appearance of the individual changes.

Peripheral Neuritis. It is difficult to appreciate the multiform varieties of neuritic manifestations seen. Following a long period of neglect in management a young boy was brought to the hospital in severe acidosis. On recovery he complained bitterly of the leg pains, the burning and paresthesias. At times he had lightning-like pains in the intercostal nerves.

A second boy of approximately the same age developed two attacks of acidosis at relatively short intervals. After recovery from the second a gradual wide spread painless motor paralysis occurred. His heart rate at rest regularly was between 140 and 160. He could not turn himself in bed or feed himself.

A third patient (age 62) had lived on a limited diet of his own choice but his daughter continued to keep his urine sugar free with small doses of insulin. He developed a generalized edema with puffiness of hands and extreme muscular tenderness. The extremities were so tender and painful that an alcoholic neuritis was suspected. There are others who have no complaints but an absence of the patellar reflex is noted in the examination.

There are a final group with muscular pains fleeting in character throughout the body. They are usually older individuals in whom arteriosclerotic changes have appeared. Hence one has great difficulty in differentiating these symptoms from those due to the arteriosclerosis.

In general it may be stated that the intensive treatment of these patients with B₁ preparations, of which there are a number available, will give relief from the acute symptoms and if continued over a long period will cause improvement in the more chronic cases.

The Arteriosclerotic Extremity. The patient with the painful arteriosclerotic extremity is one that most of us would like to refer to some one

else. Only a brief discussion of the more important principles of management will be attempted.

When a blood vessel is unable to carry an adequate oxygen supply to a muscle which is actively contracting a pain producing chemical compound is formed. This compound disappears as soon as oxygen becomes available. This is a biochemical statement of the mechanism of intermittent claudication. When a blood vessel becomes too small to supply sufficient blood to a given area collateral vessels begin to develop. It is obvious therefore that the treatment for a painful leg is to put the patient to bed until the collaterals develop. The practical difficulties in applying this principle arise out of the failure of the patient to realize the seriousness of the condition and his unwillingness to pay the price for recovery. Most physicians are willing to force a patient with angina pectoris to bed for two to three months, but they have not as yet realized that this same advice should be given to a patient with intermittent claudication.

The recovery of the circulation is facilitated by the application of a constant supply of controlled heat. A wooden box placed at the foot of the bed over which the bed clothes can be thrown and in which there is a thermostatic control serves the purpose. Such boxes have been described by Star and Sevringhaus. They may be set for any desired temperature and obviate the danger of burning the extremity. They are further valuable in furnishing a warm atmosphere through 24 hours of the day.

When gangrene develops the problems of management increase. If the area of gangrene is large, the absorption great, and an infection established, a decision to amputate at once is a life saving measure. Nothing is accomplished by the postponement of an inevitable amputation. The patient becomes a less favorable risk through delay.

If it is advisable to delay amputation and to follow a conservative plan of treatment, the first decision of importance should be as to the surrounding temperature. It has been customary to heat up such extremities to the body temperature or higher. In so doing one often loses sight of the fact that the tissues of the leg are devitalized, robbed of blood, and are undergoing autolytic digestion. This proceeds more rapidly at

a higher than a lower temperature. Allen has recently called attention to an experiment in which the leg of a dog had the blood excluded and was cooled below the body temperature. Recovery was complete in this extremity when the blood was later readmitted. The autolysis is accompanied by swelling which exerts more pressure on the arteries. Into such areas the surface bacteria invade and hasten the destructive processes. This leads to a moist gangrene.

On the other hand heat relaxes vascular spasm and is of more value in embolic than thrombotic occlusions. As a rule these extremities are most comfortable at temperatures of 85 to 90°. Moist dressings may occasionally prove valuable in establishing drainage. However, they are often harmful because of their tendency to macerate the tissue. Finally, the risk to the patient's life of so-called conservative operations on gangrenous extremities is so large that they should not be undertaken lightly.

DISCUSSION

Dr. George W. Parker, Peoria: The management of diabetes has always revolved around a dietetic regime. The patient still prefers a diet prescribing what he may and may not eat without reference to a definite amount. This is equivalent to Dr. Keeton's remark about the physician who wanders into the hospital and writes an order for a diabetic diet without giving any consideration about how much coal it takes to run the individual furnace without smoldering.

Before the advent of insulin the diet in severe cases was indeed a hardship. With the discovery of insulin it became possible to give a liberal diet, sufficient for the patient's satiety and enough to carry on his economic life.

Food habits are so firmly fixed and the will power of the average individual is so weak, that it becomes quite a problem to re-educate the patient. The fewer the restrictions instituted in the management of a case the more likely is the patient to follow the diet. One should not disrupt lifetime habits any more than necessary. It is possible to make a routine so strict and difficult that life is just not worth while. No routine is successful if a patient is hungry or if the change in his daily habits is too revolutionary.

Let me illustrate by the case of an elderly man of German descent, who was wont to take a Swiss cheese sandwich and a glass of beer at bedtime. I should be the last to forbid him this lifelong habit in the treatment of his diabetes.

Then there is the growing child who comes to his mother crying for a lunch. Subtractions can be made from the main meals, if needed, to take care of lunches.

Protamine insulin has solved some of these problems

by giving us an insulin constantly acting throughout the twenty-four hour period.

Do not deduce from what I have just said that I am not in favor of a careful education and instruction in regard to the weighed diet. Every case of diabetes, even if mild, is best managed by establishing his tolerance, raising or lowering his calories to meet the requirements of growth, work and play. Where the intelligence and education of a diabetic prevent an exact calculation and measurement of foods, the tolerance and needs can be worked out just as carefully and a so-called rough measure diet given to the patient. This procedure practically always meets the situation.

Prejudice against the use of insulin still persists and I believe this is partly due to propaganda by various cults and even by some physicians. Then, too, a layman associates habit with the use of the needle. Careful explanation, education and training will dispel this prejudice.

Dr. Keeton's discussion of the use of vitamin B-1 and B-2 (G) brings before us a valuable advance in the treatment of complications, such as certain diarrheas and cases of neuritic pain, which before were quite troublesome and baffling. It is quite likely that looseness of the bowels which we have attributed to dietetic roughage, achlorhydria or pancreatic deficiency may be explained by a vitamin deficiency. When gangrene develops and is at all extensive, amputation is imperative and should always be made high enough to give a good circulation to the stump. This is, in my experience, usually above the knee joint.

Dr. Robert W. Keeton, Chicago (in closing): In general I would like to agree with Dr. Parker. Successful diabetic management can be accomplished without scales. It is important that the patient eat the same quantity of food every day. This may be accomplished by giving the patient a skeleton outline.

Protein Requirements: To meet these he should eat the same size serving of meat each day and two eggs. If he wishes to replace one egg with a $\frac{1}{3}$ of a cake of cream cheese this is permissible. He is to take at least a pint of milk, or milk and cream per day. These quantities are so definite that there is little chance for variation.

Carbohydrate Requirements: He should take a glass of citreous fruits daily. He may eat as desired vegetables growing above the ground. Since their carbohydrate content is small a large increase in these entails only a small error. In the cities and small towns the bread is now sold cut into slices which weigh 25 gms. This is the greatest single source of error, but it can be controlled by the device of prescribing for the patient the number of slices allowed.

Caloric Adjustment: This is obtained by eating sufficient fat to satisfy the hunger. Butter, bacon and salad dressings can be taken as desired and in quantities sufficient to maintain weight. On days of rest all of the milk products allowed may be in the form of milk, on week days half or all of it could be cream.

Once a consistent intake of food is accomplished he may be desugarized by gradually increasing doses of insulin.

TYPHOID CARRIER CONTROL IN ILLINOIS*

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CHAMPAIGN, ILLINOIS

With improvement in water supply, better sewage disposal and more meticulous care of milk, it has become increasingly more difficult for the typhoid bacillus to find a vehicle of transportation to a susceptible host. In addition, we have the improved sanitary measures enhanced by widespread inoculation with typhoid vaccine. That these procedures have borne fruit is exemplified by the significant decline of the typhoid mortality rate from 37.7 per 100,000 in 1902 to 1.09 in 1935. There were 71 deaths from typhoid fever in 1936, compared to 1,882 deaths in 1902. The future of typhoid fever and subsequent decline in mortality rate will be directly proportional to the identification and control of the carrier. Here again our determination of the carrier state will be in direct ratio to the amount of consideration given to the proper release of cases as they occur.

At the present time in Illinois one case of typhoid fever is classed in the same category as an epidemic and receives equal consideration from the point of view of an attempt to determine the source of infection. It is only by expending more time and effort on the individual case that we can hope to cope with potential outbreaks of greater scope. Fundamentally the mode of approach in the determination of source of infection must always assume the existence of a carrier, unless, of course, the case may be definitely related to a pre-existing known case. The material to follow will deal exclusively with the typhoid carrier in Illinois and his control.

The final declaration that the carrier state exists in any one individual is an official action of the Illinois Department of Public Health. As cases are routinely released, those who harbor typhoid bacilli in the feces or urine three months after the date of onset are classed as temporary carriers. If these same persons still harbor the organisms at the end of one year following the date of onset, they automatically become chronic carriers. Practically all carriers identified

* Downstate only.

Read before Section on Public Health and Hygiene, at Peoria, May 18, 1937.

through epidemiologic investigation are of course of the chronic type.

As soon as the carrier state is determined, the person in question is required to sign the carrier agreement form. Recently a change has been made in this form which should be mentioned. The sentence in question which read: "I agree not to handle food for my family or for other people and to use the utmost care in my personal hygiene," has been modified to read: "I agree not to handle food for persons other than for members of my immediate family who have been immunized against typhoid fever within two years, and to use the utmost care in my personal hygiene." The reason for this change was apparent in that the majority of carriers were housewives and the former requirement placed an unnecessary burden on the family in question. Unquestionably, also, previously there were violations of this phase of the agreement with a hazard which we feel has been partially eliminated. The dates of immunization of the immediate family are checked regularly and when the time interval approaches the two year period, the family is informed that re-immunization will have to be acceded to immediately if the carrier is to be permitted the privileges of modified quarantine.

All carriers are visited biannually by the District Health Superintendents, and a report made to this Department. This is primarily for supervision of occupation and residence of the carrier. No carrier may change his residence without notifying the local board of health and the State Department of Health. When a carrier resides on premises from which milk or other milk products are distributed, the carrier is not permitted to handle said milk, milk products or utensils, or to assist in any way in milk production. The aforementioned milk, milk products and utensils cannot be brought into the residence of the carrier, and all milk and cream from such premises must be sent to a pasteurization plant.

For release from the carrier state, specimens of feces and urine must be negative at intervals of one month for four consecutive months. Such specimens must be taken at a hospital and when forwarded to our laboratories, must be accompanied by a certificate of authenticity signed by the superintendent of the hospital concerned.

The fecal specimens must be selected from the second and third bowel movement following catharsis. Temporary carriers are encouraged to submit release specimens. The first specimen for release in such cases, however, may not be submitted sooner than one month after the carrier state was determined. When a year has elapsed since the onset, and the person still harbors the organism, no effort is expended by this Department in encouraging the submission of such specimens inasmuch as our experience has been "Once a chronic carrier, always a chronic carrier." Chronic carriers may, however, submit specimens of their own initiative.

Our success in the identification of carriers, of course, relates to the uniformity and completeness with which fecal and urine specimens are obtained from those who were in contact with existing cases within a period compatible with the time of incubation, or those who may have been associated with some possible common vehicle of transmission. Needless to say, the freshness of the specimen assumes paramount importance. No specimens are given consideration in which the time interval between collection and delivery to the laboratory has exceeded two days. In addition, of course, there are minor interfering factors such as the personal inconvenience of mailing specimens, the application of postage, etc.

In our effort to cope with the above difficulties, and to ensure the obtaining of needed specimens in a fresh state, the Illinois Department of Health is now employing a mobile diagnostic laboratory. This laboratory is sent to the area of outbreak and remains there until the epidemiologic survey is completed. The mobile laboratory does not carry on the bacteriologic analysis to final completion, but makes the initial differentiation and then returns the isolated strains to the main laboratory for final identification. With a laboratory of this nature actually in the community in which there are existing cases, the maximum degree of cooperation can be obtained from the local populace. A detailed report of our experience and success with the employment of the mobile laboratory will be forthcoming at a later date.

In the detailed consideration of the available data on the existent carriers, some variation in total numbers will be noted in the various tables.

This is due to incomplete information in regard to the data referred to in the specified table.

Our records reveal that the first carrier identified downstate was in 1919. From that time to date we have on file 160 such cases. Six of these are in institutions and 29 are still classed as temporary carriers; 15 of whom have been identified up to May 1, 1937. Of the total carriers, 16 are Para B, one Para A, and the remainder typhoid. There are three persons who continue secreting typhoid bacilli in the urine, two of whom are in institutions. Of the total 58% are females and 42% males. This is a slightly higher male rate than 32.6% noted by Sentfner and Coughlin,¹ and much higher than that of 20% observed by Bolduan and Frant⁴ in New York City. In Chicago the male rate is 28%. Seemingly the incidence of male carriers is higher in the rural communities than in the large cities. Of the total carriers, 14 gave no past history of typhoid fever, but too much significance cannot be attached to this fact; as we are well aware that in the past many cases were missed due to lack of availability of the modern methods of laboratory diagnosis in such cases.

In Table 1 the distribution of carriers is given by occupation for downstate for those in whose records the information was available. Housewives make up 49%, students 11%, those handling food or dairy products 11% and the farmer, 10%. The rest are widely distributed. The high per cent of students deserves some ampliation. The majority of these were identified at the University of Illinois in the routine examination of student food handlers. These are classed as students rather than foodhandlers because, strictly speaking, this occupation was only a temporary means of earning subsistence while in school.

In Table 2 we have the grouping according to sex and age when the carrier condition was discovered.

Table 3 shows the time elapsed in years between the attack of typhoid fever and discovery of the carrier condition. Those in which the interval elapsed was less than one year were identified primarily through routine release specimens. Those in which the interval exceeded one year were of course determined through epidemiologic investigation.

Table 4 shows the number of carriers identified by year from 1919 to 1936. The number of cases of typhoid fever by year is given for the same period in order that a gross comparison may be made between cases and carriers discovered. It is significant that in 1935 and 1936 a marked rise occurred in the number of carriers identified. This suggests immediately more careful release, more detailed epidemiologic study, and finally, more satisfactory laboratory technique for identification of the typhoid bacillus. At this time it would be propitious to state certain pertinent facts concerning the laboratory modifications in regard to cultural identification of the typhoid bacillus. In 1934 the use of bismuth sulphate brilliant green agar (Wilson and Blair medium) was begun as an adjunct to Endo medium. In 1935 desoxycholate citrate agar was employed in addition to the Wilson and Blair, and Endo media. Beginning March, 1936, selenite enrichment medium followed by plating on desoxycholate citrate agar was used in addition to the aforementioned procedures. After December 1, 1936, direct desoxycholate citrate agar plating was replaced by preliminary selenite enrichment followed by plating on desoxycholate citrate agar. This method plus the use of Wilson and Blair medium is the only one in vogue at present. The use of Endo medium has been discontinued. Of 10,199 specimens examined² from 1934 to May 1, 1936, 179 were positive on both Wilson and Blair, and Endo media; 262 were positive on Wilson and Blair only; 27 were positive on Endo only. The present consensus is that preliminary enrichment in Selenite F followed by plating on desoxycholate citrate agar will give results slightly superior to Wilson and Blair medium. As routine release becomes more perfected there should be eventually no unidentified carriers except in those missed cases whose incidence is declining because of better diagnostic facilities. As we perfect our mode of epidemiologic approach, we will rapidly determine the existence of those remnant carriers not identified in the past. This is well exemplified by the results of 1935 and 1936.

In further emphasis, using the figures in Table 4, we find the carrier to case ratio for 1933 to 1936 to be: 1 to 132 in 1933; 1 to 126 in 1934; 1 to 22 in 1935; 1 to 10 in 1936. Up

to May 1, 1937, the carrier to case ratio was 1 to 5. This is quite compatible with the decreasing carrier to case ratio observed by Stebbins and Reed³ in New York State which changed from 1 to 22 in 1929 to 1 to 8 in 1935. From 1919 to 1936 there were 24,197 cases of typhoid fever reported. Considering the 145 carriers identified, we would have 0.59% of the cases acquiring the carrier state. This is considerably lower than the usual accepted figure of 2%. If we consider, however, the period 1931 to 1936, we find that 3.6% of cases were determined to be carriers. This is obviously commensurate with the acquisition and adoption of more efficacious methods.

A recent report⁵ of the New York State Department of Health makes mention of the fact that during 1936 the chronic typhoid carrier condition was detected in a larger population of recovered cases than in any previous year. This is in accord with our observations and logically should be associated with improved methods.

Table 6 shows the distribution of carriers by county. Those in Cook county are exclusive of Chicago which has on record 59 carriers. The carriers are widely disseminated involving 60 out of the total of 102 counties.

Summary. A discussion has been presented of the control measures and pertinent data relevant to the typhoid carrier in downstate Illinois. Consideration was given to factors favoring earlier and more complete identification of the carrier state.

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TABLE 1. TYPHOID CARRIERS BY OCCUPATION

Occupation	Number	Occupation	Number
Housewife	60	Nurse	1
Student	14	Maid	3
Farmer	13	Foodhandler	2
Dairy Hand	8	Veterinarian	1
Laborer	3	Broker	1
Clerk	4	Banker	1
Truck Driver	2	Other	6
Cook	2		
		Total	121

TABLE 2. GROUPING ACCORDING TO SEX AND AGE WHEN DISCOVERED

Age	Male	Female	Total
Under 10	2	3	5
10-19	12	4	16
20-29	7	12	19
30-39	7	11	18
40-49	10	9	19
50-59	3	12	15
60-69	5	8	13
70-79	0	4	4
Over 80	0	1	1
Total	46	64	110

TABLE 3. TIME ELAPSED IN YEARS BETWEEN ATTACK OF TYPHOID AND TERMINATION OF CARRIER STATE

Years	Cases	Years	Cases
Under 1	53	20-29	10
1-4	30	30-39	2
5-9	6	40-49	1
10-14	5	50-59	1
15-19	1		
		Total	109

TABLE 4. CARRIER TO CASE RATIO

	1919 to							To May,
	1930	1931	1932	1933	1934	1935	1936	1937
Carriers								
Discovered ..	45	30	39	6	9	34	54	15
Cases								
Reported ..	19005	840	1082	792	1137	775	566	74
Carrier to Case								
Ratio	1-422	1-28	1-27	1-132	1-126	1-22	1-10	1-5
Car. Per Cent.								
of Cases ...	0.2	3.0	3.0	0.7	0.8	4.5	9.5	20.0

TABLE 5. CARRIERS DISCOVERED AND RELEASED 1931 TO MAY 1, 1937

Carriers on record at end of December, 1930.....	45
Carriers discovered in 1931.....	30
Released and died in 1931.....	9
	21
Carriers discovered in 1932.....	39
Released and died in 1932.....	25
	14
Carriers discovered in 1933.....	6
Released and died in 1933.....	6
Carriers discovered in 1934.....	9
Released and died in 1934.....	7
	2
Carriers discovered in 1935.....	34
Released and died in 1935.....	9
	25
Carriers discovered in 1936.....	54
Released and died in 1936.....	8
	46
Carriers discovered to May 1 in 1937.....	15
Released to May 1 in 1937.....	8
	7
Number of Carriers on Record to Date.....	160

TABLE 6. DISTRIBUTION OF EXISTING
TYPHOID CARRIERS BY COUNTY,
ILLINOIS, 1937*

Adams	1	Livingston	1
Brown	1	Logan	1
Bond	1	Macon	8
Champaign	4	Macoupin	1
Christian	4	Madison	8
Coles	4	Marion	1
Cook	5	McLean	1
Cumberland	1	Monroe	2
DeKalb	1	Montgomery	2
DeWitt	1	Morgan	6
Douglas	1	Moultrie	4
DuPage	3	Ogle	3
Edgar	3	Peoria	4
Edwards	1	Piatt	3
Effingham	2	Pulaski	4
Franklin	4	Randolph	1
Gallatin	2	Rock Island	4
Hamilton	3	St. Clair	5
Hancock	5	Saline	2
Hardin	2	Sangamon	8
Henderson	1	Scott	2
Henry	3	Shelby	1
Iroquois	1	Tazwell	1
Jackson	3	Union	1
Jasper	3	Vermilion	2
Jersey	1	Wayne	1
Kane	4	White	2
Kankakee	2	Williamson	4
Knox	1	Will	5
Lake	1	—	—
Lawrence	2	Total	160

*Exclusive of Chicago.

DISCUSSION

Dr. Roland R. Cross, Dahlgren, Ill.: I want to congratulate Dr. Gowen on his excellent paper on the control of the typhoid carrier in Illinois as it emanates from the central office of the department of health at Springfield. Now, I wish to discuss this from the standpoint of a district health superintendent and as it presents itself to a certain extent from the rural districts of Southern Illinois, where we have so much typhoid fever.

It might be well here to give a modern definition of typhoid carrier. A carrier is a person in apparent good health who is infected with some pathogenic organism to which he is himself, for the time being, at least, immune but which, when accidentally transferred to another, may produce an attack of the specific disease.

In the last month, I have investigated the typhoid carriers in five counties, which numbered 15 cases.

Naturally of prime importance is the location of the carrier because the carrier exists, whether he is located or not, and whenever typhoid occurs no effort should be spared to locate the carrier.

Paramount, in my mind, for the control of the carrier, after one has been found is to sell him the idea that he is a carrier and, if he does not control himself, he will be a menace to the health of others as some typhoid carrier was to him. More particular attention should be given to the carrier according to his occupation, meaning that all carriers are not of equal importance as sources of infection.

For instance, let me present some cases I have investigated. Case 1. I have a carrier in my district

and living in my township a boy who is eight years of age. It is more than a year since he was declared a carrier. He has attended school and there has been no case of typhoid fever in his community in that time, showing he is under control. Now, how have I controlled that carrier in order that he might attend school? First, I had the Directors of the school finance and promote the immunization of every school child of that district, the school teacher immunized, and, practically speaking, the entire population of that school district immunized. Second, I persuaded the school directors to construct a sanitary toilet and the excreta to be chemically treated each day. Third, the directors installed a water fountain with individual drinking cups to be used, this being a country district where drinking water had to be supplied from wells. Naturally I built a barrier around him.

Case 2. This carrier was a housewife living down in Hardin County, in the foothills of the Ozarks. When I first approached them about her being a typhoid carrier, they were very hostile toward the proposition and the signing of the agreement. This was due to ignorance and I spent about two hours with this family, explaining to them how typhoid fever was contracted and how she could prevent exposing someone else as she had been exposed. In other words, using salesmanship to convince this woman that the department of health was acting as a friend to humanity in trying to control her. She had what was called a "milk house" a short distance from her home and this was where their milk was kept and cooled by running water. She was then getting ready to take some of the milk to a community church supper. I talked with them and reasoned with them and really convinced them that we were right and left them enlightened and glad to cooperate with us in trying to prevent the spread of typhoid fever and so I think the education of the carrier is a paramount issue with the control of the carrier.

Each carrier presents an individual problem. I think it would be wise, indeed, if the department of public health would issue a circular to all known typhoid carriers giving them, in non-technical terms, a general idea of their potential danger to the health of others and of the rules they should observe to prevent their being a menace, stressing the fact that it is only through carriers that typhoid fever spreads.

Dr. C. H. Benning, Peoria: What do they do with the carrier after they find them? Is there any medical treatment undertaken to remove the condition and how and when do they declare them non-carriers? Does the release of the typhoid carrier depend upon the fecal examination or bowel examination?

Dr. Winston H. Tucker, Springfield: If there is a medical treatment for a typhoid carrier, I wish you would tell us; we don't know. Gastroenterostomy has been favored in some cases but there is a surgical risk, and we don't advocate that. However, as to the second question, doctor, we release typhoid carriers on four consecutive authentic stool specimens. I say, authentic. Now, a chronic typhoid carrier will discharge typhoid bacilli at intervals. They will discharge them for a while and then stop and they will continue and then

they will stop. We require cathartics and take the material from the second or third bowel movement. We get some material from the small intestine; a loose movement; not a stool which remains in the colon for three days, which dries hard and all the typhoid bacilli die in that. We are very careful about our specimens. We don't put down a tube for bile drainage. We haven't done it. I know it is done, of course, by health departments in this country. But there are times when the feces will become negative and the bile specimen is still positive. We know that but we haven't carried out that procedure in this State but we have that in mind and we will get at it in the future, I assure you. However, in general, we believe that, once a carrier, always a carrier. We don't encourage releasing, as I tried to point out in the paper. However, we try to be lenient with him and give him plenty of room ventilation, and, if we can be sure that his feces and urine are free of typhoid bacilli in four consecutive monthly specimens, he is then released from the typhoid carrier agreement.

Dr. Benning: If you have one isolated case of typhoid fever in a community, how much effort do you expend in that case to find carriers?

Dr. Tucker: That is a good question. There is a stool specimen from every member of the family and careful questioning to see if there have been visits to that family from relatives or neighbors or friends or any citizens. It is simply a matter of common sense epidemiology; any information at all we can get as to a possible lead as to the source.

Dr. Arlington Ailes, LaSalle: Do you require a cathartic in all of these cases?

Dr. Tucker: Yes.

SURGICAL PATHOLOGY OF TUMORS OF THE BREAST

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CHICAGO

This paper is based upon the study of 250 cases of tumors of the female breast, diagnosed histologically and treated at the Research and Educational Hospital of the University of Illinois, College of Medicine in Chicago.

MAMMARY GLAND

Embryology: The breast is composed of two embryological elements, (a) Glandular tissue derived from the ectoderm by a process of inbudding; (b) Supporting connective tissue derived from the mesoblastic subcutaneous tissue over the fascia of the pectoralis major.

(a) From the deepest stratum of the ectodermal bud arises a number of solid buds, ex-

actly similar to those of the sweat glands. The stalks of these buds form the epithelial lining of the lactiferous ducts. Each bud forms a lobe which subdivides into several lobules, which at first solid become canaliculized, opening by a patent duct through the nipple.

(b) As the glandular buds grow into the subcutaneous mesodermal tissue they become surrounded by perilobular and periductal sheaths. The deep and superficial portions are connected with the anterior sheath of the pectoral muscle and the skin for they are all part of the same subdermal layer.

Lymphatics. During the third fetal month the skin and subcutaneous tissues become invaded by the developing system of lymphatic vessels. The periductal and perilobular lymphatics communicate through the septal or interstitial vessels with the superficial mammary and retromammary lymphatics. The superficial communicate with the subcutaneous and the deep with those of the pectoral sheath. Both of these join in the circummammary lymphatics, and from these pass efferent vessels to the pectoral and central nodes of the axilla; other efferent vessels pass from the circummammary to the anterior intercostal nodes of the upper four spaces.¹

Histology. The mammary gland is a compound alveolar gland consisting of from 15 to 20 lobes, each of which is subdivided into lobules. An excretory duct passes to each lobe, where it divides into smaller ducts, which in turn open into alveoli. The alveoli are lined by a single layer of low columnar or cuboidal epithelial cells resting upon a homogeneous basement membrane. Both lobular and lobar ducts are lined by similar epithelium but as the nipple is approached there may be two layers and at the nipple the epithelium becomes of the squamous variety.

Anatomy. The mammary gland rests upon the fascia of the pectoralis major and is held in position by fibrous bands attached to the skin and the pectoral fascia. The major portion of its arterial supply comes from the external mammary artery which is a branch of the lateral thoracic. In addition there are branches from the 2nd, 3rd and 4th perforating branches from the internal mammary and also from the same

¹Read before Section on Surgery, 87th Annual Meeting, Illinois State Medical Society, Peoria, May 19, 1937.

level lateral branches of the intercostals. The venous return corresponds to the arterial supply.

Lymphatics. The lymphatic return corresponds to the venous return. The major lymphatic drainage passes along the vessels adjacent to the external mammary vein and thus is returned to the pectoral nodes in the axilla, then to the infraclavicular group, and by way of the supraclavicular nodes to the thoracic duct on the left side, and the right lymphatic duct on the right side, thus entering the circulation. In addition the deeper lymphatics go by way of the sternal group to the mediastinal nodes. As the lymphatics of the breast communicate with those of the pectoral fascia there may be drainage along all the fascial planes, viz. those of the pectoralis major and minor, the serratus anterior, the external oblique and even along those of the rectus sheath.

The mammary gland is well encapsulated and is enveloped by pads of fat which gives the breast its rotund contour.

TUMORS OF THE MAMMARY GLAND

In this series of 250 cases the largest group is that of carcinomata of which there are 141. The benign cases number 109. There were no malignant tumors of mesoblastic origin.

Benign Tumors. The following varieties composed this group: 92 fibro-adenomata, 11 cyst-adenomata, 3 papillomata and 3 lipomata.

Fibro-adenoma. The age incidence in decades is as follows: 2nd 10, 3rd 45, 4th 18, 5th 18, 6th 1. The largest group occurred from 20 to 30 years when practically 50% of the total appeared during this period. The clinical history in all cases was essentially the same: During the menstrual period there was complaint of pain in the breast which disappeared on cessation of the flow. The pain called attention to the breast and a tender lump was noticed, which in nearly every case was found in the periphery; there was no discharge from the nipple and the fear of malignancy was the usual cause of medical consultation. The mass was usually single, fairly firm, even nodular, freely movable, not adherent to the skin or fascia, in all cases complete excision of the tumor was done.

Histology. About 50% were intracanalicular, the remainder extra. The amount of fibrous tissue varied greatly, some cases were almost

pure fibroma while in others there was a marked predominance of adenomatous tissue.

Cystadenoma. 11 cases. Age incidence in decades, 3rd 2, 4th 3, 5th 3, 7th 3. Usual clinical history similar to that of fibro-adenoma. Tumor was in central portion of breast, rounded but occasionally nodular. Complete excision done.

Histology. All cases showed cystic dilatation of ducts with the presence of adenoma in the wall of cyst. In 3 cases there was a papillomatous growth into the cavity of the cyst.

Papilloma. 3 cases. Two occurred during the 4th decade and one during 5th. Each case gave a history of recurring bloody discharge from the nipple, no tumor noted by either patient or attending surgeon. Exploration of the whole breast was done and in each case a simple mastectomy was performed. Grossly each resected breast showed a centrally located tumor mass which showed a papillomatous growth in a dilated duct, the cavity of which was filled with old blood.

Histology. Marked hyperplasia of duct epithelium which is thrown into folds but with no invasion of the basement membrane. No increase of interstitial elements.

Lipoma 3 cases. Two during the 5th decade and one during the 6th. All were encapsulated fatty tumors within the substance of the breast.

Histology. Simple lipoma.

MALIGNANT TUMORS

In this series there are 141 malignant tumors, all of epithelial origin as follows: Adeno-carcinoma 117, scirrhus carcinoma 18, squamous cell carcinoma 4 and 2 papillary cyst-adenocarcinomata.

Quadrants of Breast Involved in Carcinoma			
Upper	Lower	Upper	Lower
lateral	lateral	medial	medial
70	47	41	35

Involvement of Nipple—7.

Radical Mastectomies—130.

Cases having axillary metastases at operation—72.

Adeno-carcinoma. Age incidence in decades: 3rd 1, 4th 16, 5th 47, 6th 35, 7th 14 and 8th 4. Every phase of this condition was encountered, from one month's apparent duration to a history of a tumor for 4 years. The usual complaint was a painless lump in the breast, the upper lateral quadrant being the one most involved. X-ray examination of the thorax was done in

all cases and only negative ones were operated upon. In this group 108 cases were done with resection of the pectoral muscles and complete excision of the axillary lymph nodes, the latter showing carcinomatous metastases in 58 instances. These metastatic lesions varied in size from that of a small pea to that of a hen's egg. In a few cases it was necessary to dissect away nodes which completely encircled the axillary vein. Several cases showed extensive involvement of the pectoral fascia. The operations were performed by four different surgeons, the most radical procedure being done by the writer who consistently resected, in addition to both pectoral muscles, the fasciae of the serratus anterior, the external oblique and the anterior sheath of the rectus down to the level of the umbilicus.

As noted above only nine cases in this group were not subjected to the radical operation. Three simple mastectomies were done on account of the extensive involvement, and in these cases axillary nodes were palpable but not resected and naturally are not included in the metastatic group in that no histological examination was made of these nodes. The remaining six cases were treated by x-ray alone.

Histology. The majority proved to be of the medullary type. There were six cases which were undoubtedly of ductal origin, but to avoid confusion these were left in this group. Several arose from sweat glands. We were unable to prove definitely the exact origin of many others although they were of the adenocarcinomatous variety.

Scirrhus Carcinoma. Of this variety there were 18 cases with the following age incidence: 4th decade 3, 5th 9, 6th 4, and 7th 2. This series gave the longest history of the presence of a tumor in the breast which accounts for the exceedingly high percentage of axillary metastases; 14 out of 18 cases showing axillary involvement and 2 of the remaining presenting clinical evidence. 16 radical mastectomies were done, the other 2 cases were treated by simple mastectomy and x-ray, on account of the extent of the lesions.

Histology. Areas of carcinoma cells surrounded by marked proliferation of fibrous tissue.

Squamous Cell Carcinoma. Four such cases were seen and they all arose in the region of the

nipple, with extension centrifugally. No clinical diagnosis of Paget's disease was made. These cases did not show any spread to the axillary lymph nodes. Age incidence: 6th decade 3 and 7th 1.

Histology. All cases showed a typical squamous cell carcinoma arising in the region of the nipple, causing erosion in this area and then spreading peripherally along the lactiferous ducts.

Papillary Cystadenocarcinoma. 2 cases. Age incidence: 6th decade 1 and 7th 1. These were centrally placed and undoubtedly arose from an original benign lesion. No metastases noted.

Histology. Proliferating malignant papillary growth filling a cystic area. In one case there was only a small area of invasion into the surrounding tissues beyond the cystic wall.

Dissemination of Carcinoma of the Breast. Sampson Handley laid down the principles of spread of carcinoma many years ago and with slight change these principles are still accepted, viz. 1. Direct extension, 2. Lymphatic permeation, 3. Lymphatic emboli, 4. Venous emboli.

Direct extension: Under this heading can be included all adjacent invasion other than that through the lymph vessels. This was seen in this series as extensive local growth due to invasion of the surrounding areas. Extension of the tumor by this method is slow compared to the second type.

Lymphatic permeation: In this manner the spread can be rapidly disseminated to even distant parts in a very short period of time. This type means that the carcinoma cells invade a lymph channel, multiply and then obstruct the lumen causing the vessel to rupture and disseminate the tumor to other areas, a retrograde involvement may be set up and Carnett says "retrograde permeation of the trunk lymphatics is a more rapid process than permeation of the small lymphatics of the fascial plexus."² As the superficial and deep lymphatics of the breast communicate with those of the pectoral fascia, extension along these planes may be very rapid and thus cause early involvement of the pectoral nodes. Over 50% of the cases in this series showed metastatic lesions in the axillary nodes, only a few of which did not present an almost continuous procession along the course of the external mammary vein and lateral thoracic vein. This phase has convinced the writer that

most of our cases showed permeation rather than lymphatic emboli.

Permeation of the lymphatics is undoubtedly the method by which there can be extensive spread to the pectoral fascia, the axillary and mediastinal nodes, the diaphragm, the thoracic and abdominal viscera, the lumbar nodes, the spine, the pelvis and even to the brain. Every one of these types of metastases has been in evidence in the follow-up of this series. Carnett² again says "retrograde involvement of the lymphatics along the posterior wall of the abdomen extends into the pelvis long before subcutaneous permeation nodules reach the upper abdomen." In this manner there can be extensive distant involvement and yet very little can be noted near the primary focus.

Ewing,⁴ quoting Gross from 423 autopsies, placed the organs in the frequency of involvement in the order: pleura 50.9%; lungs 49.9; liver 48.6; bones 20.5; brain 9.4; ovary 8; opposite breast 7.8; ura mater 5.9; kidneys, retro-peritoneal nodes and uterus 5.7 to 5.2 and other organs less than 5%.

The citation of one particular case is an excellent example of diffuse lymphatic permeation.

A. O., aged 32 years, in January, 1935, noticed a small lump in her right breast. Was seen by the writer in February and operation advised. At that time there was only a small painless mass in the upper lateral quadrant. No clinical evidence of malignancy. Patient was seen again in 3 weeks when the clinical evidence had developed, viz., nodular firm mass, lymphatic edema and dimpling of the skin but no axillary lymph nodes were palpable. Radical resection of the breast, both pectoral muscles and fasciae was done. Even at that short time there was extensive lymphatic permeation which was even palpable at operation. The diagnosis was scirrhus carcinoma and there was secondary involvement of the pectoral and infraclavicular lymph nodes. X-ray treatment was given. 16 months later there was complaint of pain in the right sacral region, x-ray was negative but x-ray treatment was given to this area. In September there was positive x-ray finding of rarefaction in the iliac bone. At intervals of three months, x-rays were taken showing the spread until the whole pelvis is now moth-eaten and extension up the spine with collapse of the body of the 3rd lumbar vertebra. In April, 1937, a small mass developed in the upper lateral quadrant of the left breast. This was excised as it gave the appearance of a primary tumor. Histologically it was an adenocarcinoma and as far as one can tell is a primary tumor. At no time has there ever been any recurrence locally and no x-ray evidence of metastases to the lungs, nor is the liver enlarged.

Lymphatic emboli. Undoubtedly a certain

number of these cases showed this method of spread but once the emboli reach the axillary nodes the picture remains the same as the foregoing type.

Venous emboli. This type is much less common than one would imagine as early metastases to the lungs are not frequently encountered.

Summary. 250 cases of tumors of the female breast have been studied clinically and pathologically. In this series there are 141 carcinomata. (56% of total.)

130 radical mastectomies were performed. 72 of this group showed axillary metastases on histological examination of nodes. (55.3% of cases operated upon radically.)

The 11 remaining cases all showed clinical axillary metastases, thus making 83 cases showing histological and clinical metastases. (58.8% of all carcinomata.)

In only 2 cases is there a certainty that malignancy arose in an original benign lesion.

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X-RAY THERAPY IN CANCER OF THE BREAST

JAMES T. CASE, M. D.

CHICAGO

The literature presents conflicting statements and statistics concerning the employment of radiation therapy in connection with operation for carcinoma of the breast; and in the mind of the average surgeon there still exists considerable skepticism as to the value of radiation as well as a notable lack of understanding of the principles underlying proper technic and dosage. In every breast cancer case the clinical and gross pathological factors must be evaluated and a plan of irradiation mapped out with respect to the operative procedure, so that one knows pretty well in advance what frequency of application, what intensity and dosage of each individual séance, what total dosage, what filter, focus-skin distance and portals are appropriate; and this course when embarked upon should be followed without interruption and only with such minor

Read in the Section on Surgery, Illinois State Medical Society, Peoria, May 19, 1937.

modification as reactions may indicate. Such a plan requires just as much technical knowledge, training and judgment born of experience as does the surgical procedure. Few surgeons have found it possible to spend time to acquire this training and experience in radiological applications, yet I have more than once had the disturbing experience of having a patient only a half or a third through the planned treatment series inform me that the attending surgeon had said no more treatments would be required, or that the séances might be suspended for a few weeks and then possibly resumed, or that it would be better to space out the treatments at longer intervals: or of having the surgeon call me on the telephone and blandly informing me that he thought the patient had had enough x-ray therapy! X-ray management of breast cancer requires a thoughtfully and scientifically planned course of treatments, accurately executed.

Statistics may render great aid in the evaluation of certain methods, yet they may lead to erroneous conclusions. One must consider the source of the calculations, the material involved, the probable value of the work done. It is therefore necessary to set aside a great mass of figures offered and accept for judgment only those which come from large clinics with an abundance of controlled biopsy material, where the facilities for follow-up are satisfactory, and where the criteria for radiotherapeutic technic are strictly up to modern standards. One well known clinic recently published statistics which seemed to show that the addition of x-ray applications to surgical treatment actually shortened the life expectancy of breast carcinoma patients operated on; yet a little inquiry would have revealed that the radiological technic would be considered by most of us as grossly inadequate and that a manifest unfairness was evident in the statistical computations. For instance, it is unfair and illogical to include in the surgical statistics only those cases considered operable and to embrace in the x-ray column all cases receiving therapy, even those for early or late post-operative recurrences and metastases, or those whose disease was considered too far advanced for any surgery and were sent for radiotherapy rather than have nothing at all done.

The statistics which seem most reliable orig-

inate in such institutions as the famous tumor clinics in Stockholm, Lund, Paris, London, Zurich, the Memorial Hospital of New York City and similar large institutions maintaining thoroughly efficient departments for following up end-results. The statistics from such institutions show beyond question that the five-year survivals after combined operation and radiotherapy adequately administered are nearly double the figures obtained after surgery alone. One must consider these statistical observations very seriously, for they can hardly be subject to question. The Swedish figures are particularly valuable inasmuch as the government pays the travelling expenses of patients to and from the tumor centers, for treatment and for follow-up.

Furthermore, the statistics on cases treated eight or ten years ago are hardly comparable with the results which may be reasonably expected from the treatment now being given, because of the improvements of technic and apparatus which have come about within the last decade, and yet the five-year results now available constitute facts which are not easily explained away. They leave the surgeon practically under bond to subject all his cases of mammary carcinoma to radiotherapeutic supplementary management in connection with his surgical attack.

What cases of breast carcinoma should have x-ray treatment?

1. There has been no dissension over the proposition that in those cases unsuited for surgery x-ray therapy is clearly indicated. This group includes not only cases where an otherwise operable tumor is not submitted to surgery because the patient refuses operation or because other co-existing disease renders operation out of the question, but also cases with fixation of the breast tumor itself to the chest wall, supraclavicular glandular involvement, definite involvement of the opposite axillary nodes, diffuse subcutaneous nodules, diffuse inflammatory carcinoma involving a considerable skin area, pleural or mediastinal metastases or more remote metastases. Life expectancy is usually materially prolonged where proper irradiation is given in such cases. In a few instances little benefit is seen, and some patients may be damaged by over-treatment so that life is shortened and suffering increased. On the other hand the

great majority are benefited and live from one to five years longer than would be possible without radiation, with partial or complete relief from suffering over a considerable period. I have seen metastatic bone involvement, even so severe as to render the patient a helpless bed-ridden wreck, restored to normal and the patient enabled to resume her usual activities for as long as five years. Such palliation is infinitely worth while even though obtainable in a minority of cases. Adair reported 37 patients treated by irradiation alone with 36% alive over five years. Even metastases to the lungs and pleura do not contraindicate palliative efforts by radiotherapy.

2. Cases operated on but showing signs of inoperable recurrence offer no favorable field for radiotherapy and yet all authorities join in agreement that the application of x-rays or radium or both is the only recourse. A small non-adherent skin lesion or a small movable nodule may be looked upon as operable if no other evidence of disease is found, and it is justifiable to remove such a recurrent nodule, giving irradiation before and after the excision. Wide dissemination of the recurrence must be assumed if several such lesions are present, and in such cases attempts at operative relief are surely futile. If very advanced breast recurrences are present, one may only hope for such relief of suffering as may be obtained by adequate doses of pain-relieving drugs and frequent dressings of any foul ulcers to satisfy the patient that treatment is still in progress. Of those cases of recurrence in which, with reason, something favorable might be anticipated from palliative radiotherapeutic efforts, about 25 per cent will be alive and in comfort three or four years later. These patients must be kept under constant observation and general health upbuilding measures. Some of my cases have maintained their normal home and social activities for more than five years after the discovery of the first osseous metastases. Particularly striking improvement has been observed in several cases of disabling metastatic involvement of the lumbosacral spine, where complete recalcification has taken place with restoration of normal function. In a few cases collapsed vertebral bodies have recalcified in their compressed form and have become symptomless.

3. In the primary operable group an increas-

ingly large proportion of surgeons have recognized the value of radiotherapy as an adjunct to surgical attack on breast carcinoma. Many believe that if properly administered x-ray therapy is useful after operation to prevent or discourage recurrence, those very arguments for post-operative prophylactic treatment indicate the value of pre-operative radiotherapy.

Statistics concerning postoperative radiation following breast operation are difficult to analyze, for the results depend upon a number of factors: (a) whether operation was radical or only resection of the breast itself; (b) whether the tumor was non-adherent without palpable lymph nodes; (c) whether the tumor was non-adherent, but palpable lymph nodes were present which on section showed carcinomatous invasion; (d) whether the tumor was adherent and lymph nodes involved; (e) whether there was a large adherent tumor with enlarged supraclavicular nodes and skin ulceration.

In the group of simple tumor without adenopathy, which comprises only five or ten per cent of cases coming to our clinics, results are excellent by surgery alone or combined with radiation. The difficulty of being sure not to overlook small but involved axillary lymph nodes is so great that one cannot depend on palpation, even at operation, to exclude them. In spite of good results in this favorable group from surgery alone, it is our opinion that associated radiotherapy should not be omitted. Anschütz found nearly 30 per cent. of ten year cures in this group by routinely combining postoperative x-radiation with surgery. In the other groups no one denies the indications for postoperative irradiation.

The value of pre-operative radiation therapy.—The case for preoperative irradiation is growing stronger as statistics accumulate. In the Radiumhemmet at Stockholm since 1921 preoperative therapy has been employed in many cases, as well as the postoperative treatment; and the tendency to preoperative treatment is steadily increasing. In one section all breast cancers have for several years been receiving preoperative treatment. The aim is to act upon the neoplastic tissue, its surroundings and possible metastases. The hope is to establish a diminution of the perinodular infiltration thus facilitating radical operation; to cause attenuation of

the neoplastic virulence thus reducing the danger of operative dissemination of tumor particles; and to initiate by irradiation a certain resistance in the body against latent metastases in an early stage of development. This latter hope has some good foundation in clinical observations. The plan of treatment is such that the least possible damage will result to surrounding and underlying tissues, and to cause a minimum of systemic upset. Tangential radiation is utilized where possible. The tumor often disappears entirely, and in the majority of cases it diminishes considerably. Our tendency has been to increase the intensity of our dosage, but to extend it over a longer period of time.

Under this mode of adequate intensive prolonged pre-operative therapy, some apparently inoperable cases become operable. In a case where surgery is planned I never consent to give the pre-operative series without having the patient's promise to go on with the surgery as planned by the surgeon who refers me the case; and plans are made for possible further irradiation after recovery. I believe a radical operation should always follow such an irradiation series, no matter how completely the lesion may seem to clear up. A lapse of time is needed after terminating the pre-operative irradiation before proceeding to the surgery. This period has been gradually lengthened year by year. The best time for the operation is forty to sixty days after the termination of the x-ray treatment, to allow time for the return of the skin to normal and to permit full development of the perinodular fibrosis and other biological changes upon which the favorable results depend.

Just before he died Bloodgood was unceasing in his efforts to advocate pre-operative irradiation of breast cancer. He urged that there is no danger whatever in giving pre-operative irradiation to clinically operable breast cancers, and no danger in delaying the complete operation from two to three months devoted to a thorough course of irradiation. The majority of surgeons are willing to give irradiation a trial in hopeless and inoperable cases but there is an increasing number of surgeons who feel that the moment pre-operative intensive irradiation begins, the danger of delay is averted, so there is ample time for a carefully planned course of treatment with x-ray and an appropriate further delay of eight

to ten weeks before the surgery is done. There is good ground for believing that if there is no existing internal metastasis there is very little danger of its occurring or of further axillary gland involvement after properly performed pre-operative irradiation.

Bloodgood in 1935 stated: "At present, throughout the entire world, the modernly and efficiently trained operator fears and wishes to avoid any delay the moment the diagnosis of cancer of the breast has been made, clinically or at biopsy. Apparently we have evidence to conclude that this is based upon fear and not on facts; and on the most careful study of my cases up to date, my entire evidence confirms the statement that there is no danger from further delay if the time is taken for proper pre-operative irradiation." . . . "Of course, all the clinically malignant cases are now irradiated first, no matter what the degree of malignancy may be."

All clinically benign or doubtful tumors should be excised and sent to the laboratory. Unless they are distinctly benign, irradiation should be commenced at once while waiting for the decision of the several pathologists to whom sections are submitted. When cancer is diagnosed the irradiation is completed before the radical operation is performed. When the sections show a benign lesion irradiation should be stopped, of course, and no harm has been done.

Bloodgood further stated: "I am convinced that we have sufficient evidence to demonstrate that closure of the wound after the excision of a tumor of the breast and thorough pre-operative irradiation promise the patient more, even when the axillary glands are involved, than the immediate complete operation without irradiation. There is sufficient difference of opinion, however, and both procedures will be followed in various proportions by the different operators of the civilized world. Those who give pre-operative irradiation, with and without preliminary biopsy, are at present in the minority, but their number is gradually increasing, and those who are proceeding with immediate operation, because of the evidence of a distinctly malignant tumor, although still in a majority, are diminishing in numbers."

It must be admitted that a third of a century of breast surgery leaves us without great hope that the present percentage of five- and ten-year

cures will be appreciably raised by any modification of the present highly developed surgical technic. On the other hand there has been a steady increase in percentage of five-and ten-year survivals when to the radical surgery is added the steady improvement in radiotherapeutic technic. Dosage measurements are now precise, whereas a decade ago we had no accurate means. Marked advances have been made in our knowledge of the effects of radiation and in the technical application of x-rays and radium. Both have their field of usefulness. The radium is especially valuable in the treatment of local nodules, the x-rays for a well-distributed homogeneous radiation effect.

The use of radiation therapy either before or after operation for breast cancer, by all our modern concepts means a prolonged therapy which is also more costly than the relatively simple and short treatment courses of twenty-five years ago. In the early days we could use any diagnostic x-ray apparatus with a filter of aluminum and we soon had given enough x-ray to tan the skin. Any definite skin reaction approaching vesiculation was feared. Dosage measurements were rather unsatisfactory and empirical methods of dosage estimation made all of us over cautious. Today we realize that a good result requires the delivery into the disease-bearing tissues and into the potential avenues of cancer dissemination of a dose several times that required to kill epithelial cells. To accomplish this requires high voltage of at least 200 peak kilovolts: high filtration with copper or silver or equivalent; longer focus-skin distance; very carefully chosen treatment portals with protection of surrounding parts; and a consequent enormous increase of the intensity of the radiation. The result is a great multiplication of the expense and prolongation of the time which the physician-radiologist must personally devote to each case. The period of treatment, taking our hint from Regaud and Coutard's success in head and neck tumors, is usually spread out over twenty-five to thirty or more sances, given daily or as nearly so as the patient can tolerate. There are great individual differences in susceptibility to radiation, to which the plan of radiotherapy must be adapted. I now routinely employ a combination of the saturation dose method of Pfahler and the fractionated dose method (Con-

tard) in all my pre- and post-operative breast irradiation.

Pre-operative irradiation, by this plan, really requires a rather definite diagnosis of cancer. Though I have not seen any harm result from pre-operative intensive x-ray therapy given in a case where later surgery showed the lesion to be benign, one feels considerable chagrin over the unnecessary effort and expense. Ewing, Adair, and others at the Memorial Hospital have devised an aspiration biopsy method which they consider satisfactory.

There are some distressing complications, such as pneumonitis with fibrosis and in some cases anemia, but fortunately they are not frequent, and in the majority of cases recovery takes place spontaneously. It is well to watch carefully for them and to take such prophylactic precautionary measures as may be indicated.

Ample statistics from reliable sources now show that at the end of five years with no treatment 12 per cent of breast cancers will be alive: surgery alone promises 35 per cent cures and surgery with irradiation 55 per cent cures. Is it not then proved that every surgeon is duty-bound to associate radiotherapy with his surgical attack on this serious disease?

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ICTERUS IN THE NEWBORN

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Icterus of the newborn is divided by Helmreich¹ into the following groups: Icterus neonatorum, icterus gravis, septic icterus, luetic icterus, and icterus due to congenital atresia of the bile ducts.

Icterus neonatorum occurs so frequently it is usually referred to as "physiologic jaundice of the newborn". Helmreich, in Vienna, found 80% of full term babies, and 100% of prematures jaundiced. It has been variously estimated that from 15% to 100% of newborns are icteric. The disparity of statistics in this regard is probably due more to technique of observation and standards of selection of cases, than to actual variations of the occurrence of icterus in various communities. Bonar² suggests that there are

Read before Meeting of Obstetricians and Gynecologists at 87th Annual Meeting of Illinois State Medical Society, May 18, 1937, Peoria.

three distinct degrees of icterus neonatorum, viz., latent, transient and true icterus. In the first group, there is an increase of bile pigment in the serum, but no tinting of the skin. Rood Taylor³ found that all the newborns he examined had latent icterus, showing icteric indices over three times that of the normal adult. In transient icterus, "the tint is light, and there is no staining of the tissues, the coloring being due to bile in the lymphatics". In true icterus, there is a deposition of bile pigment into the tissues.

Aside from the tinting of the skin, and perhaps some drowsiness, there are rarely any untoward symptoms in icterus neonatorum. The stool contains bile, while the urine is usually free from bile pigment. The pigmentation is first noticeable on the trunk, and about the neck. If a more extensive jaundice develops, the extremities, mucous membranes and conjunctiva are usually involved in turn. The recession follows the reverse order, and is complete in ten days to three weeks. Examination of the blood shows an increase in bilirubin content which may be measured by icteric index, the spectrometer, and the Van den Bergh reaction. The indirect diazo reaction of Van den Bergh is given, indicating the extra hepatic origin of the pigment.

Like so many of the common phenomena of life, a complete understanding of the etiology and pathogenesis of physiologic jaundice has been difficult to attain, and investigators still quibble over the relative importance of various factors. Its universal occurrence, its limitation to the first week of life, its self-limited course, and its uniformly benign character require one to seek an explanation in the anatomic and physiologic peculiarities of the newborn.

Before precise laboratory methods were available, anatomists sought a complete solution of the question in mechanical factors influencing circulation of blood about the liver, and flow of bile into the intestine.⁴ Pinching of the bile ducts between the lobes of a swollen liver compressed by the moving diaphragm, was Hasse's explanation. Others sponsored such theories as swelling of Glisson's capsule: obstruction of the large bile ducts by desquamated cells and mucus: a catarrhal inflammation spreading from the duodenum. All of these theories would explain only an obstructive jaundice, which did not fit with the clinical picture of bile filled stools and bile-free urine. Quinke's notion that bile pig-

ment was absorbed by the immature intestinal mucosa, and short-circuited directly into the blood stream through the ductus venosus, was more tenable, but failed to fit in with more recent observations.

Minkowski⁵ removed the livers from geese and found the geese developed no jaundice. From this, he deduced that without the liver there can be no jaundice; that is, that all bile pigment is made, as well as excreted, only by liver cells. This influenced the reasoning of Knopfmacher, and Yllpö, who believed that more bile was formed than the ducts could carry, and was consequently excreted from the liver cells back into the blood.

When Van den Bergh⁶ applied the diazo reaction to icteric blood serum, he found that bilirubin from cases of bile duct obstruction gave a color change immediately (a so-called direct reaction), while in hemolytic icterus, a reaction was obtained only after precipitating the serum protein with alcohol, an indirect reaction. This gave a means of discerning the origin of bilirubin. In applying the tests to newborns, Grulee⁷, in 1925, and others since, have found that in icterus neonatorum, the indirect reaction is uniformly obtained, indicating that the bilirubin has not been excreted by the liver cell, and resorbed into the blood, but is of hematogenous origin. Cases of indubitably obstructive jaundice, however, did not always give the direct reaction, in this way not conforming to the findings in the adult. Therefore, we may still be unable to entirely rule out some resorption of bile, as suggested by Quinke.

Time does not permit a review of all the work upon which the present day conception of icterus is based, but a few established facts, and a statement of the modern theories may be of value. The fetus living in a state of anoxemia, due to the inefficient aeration of the fetal blood, develops a compensatory increase in red blood cells and hemoglobin, so that there is a distinct polycythemia at birth. With oxygenation after breathing has been established, a rapid reduction in red cells takes place, freeing hemoglobin⁸, which is split by the reticuloendothelial cells in the capillary bed to bilirubin, and a colorless iron containing fraction. Thus the bilirubin content of the blood, which is already high in all babies at birth, is further increased.

Lereboullet⁹ found more bile pigment in the

blood from the umbilical artery than from the umbilical vein, indicating that before birth bile is excreted through the placenta. The interruption of the placental circulation at delivery cuts off this route of excretion.

It is believed that the function of the liver cell is not to make bile pigment, but to selectively excrete that which has been brought to it from the phagocytic cells of the capillary bed. While the normal adult liver cells would very rapidly pick this bilirubin out of the blood, and excrete it in bile¹⁰, the liver cells of the newborn are not capable of handling this extra load efficiently. This is possibly because of the accumulation of thick bile in the small bile ducts which have been shown histologically to be greatly distended¹¹, or is possibly due to suppression of excretory function from injury of the cells by anoxemia¹⁰ or toxins. The infant kidney also is resistant to excretion of bile pigment, as evidenced by the bile-free urine in the milder cases.

Czerny, Keller and Unger¹² believe that liver cell injury is secondary to bacterial development in the intestine with the absorption of toxins, or the organisms themselves, through the easily permeable intestinal mucosa. This would explain the occurrence of apparent epidemics of icterus frequently encountered, and their observation that thoroughly cleaned nurseries might be free from epidemics for many months. However, the very early occurrence of the jaundice, and its absence in slightly older infants with really severe intestinal infections, makes it unlikely that intestinal toxemia is a major factor in all cases of icterus neonatorum.

As yet eluding satisfactory explanation is the selective distribution of the pigmentation in various tissues, and the variation in the intensity of the jaundice in different individuals with the same icteric index. There is evidently a capillary threshold determined by factors influencing osmotic tension.

It seems logical, then, to consider icterus neonatorum not as a disease, but as a symptom brought about by a variety of forces and conditions peculiar to this period of transition from parasitic to autonymous existence.

The incidence of icterus neonatorum was noted in 3,000 babies born in twelve months in the normal obstetrical ward of Cook County Hospital, in 1931 and 1932. Of these, approximately 45% were Negro, and 55% were white babies. They

were examined once in the first week of life, and the incidence of icterus and other variations from the normal were recorded. 737, or 24.4% were more or less icteric. The percentage of icterus varied with the age at examination, as illustrated in Table 1. It is probable that the actual rate of occurrence of clinical icterus is best shown by the 1,610 babies examined when three, four, five, and six days old, of whom 495, or 30.7% were visibly icteric. The skin pigment of the colored babies evidently interfered with the interpretation, for in only 11% of these was jaundice noted, compared to 35% in the whites. At this rate, the icterus incidence in the white babies observed between the fourth and seventh days is about 41%.

The visibility of icterus also varies with illumination. A case readily noted in bright sunlight may be scarcely discernible on a dark day, and may show no tinting if observed by a yellow artificial light. All of the examinations in this series were made by daylight before a large window, but not in direct sunlight. The monthly variations noted in Table 2 may be partially accounted for by the poor light during the winter months.

The physiologic type of jaundice is usually said to appear on or after the third day of life, and before the tenth. However, of 597 babies examined when one day old, 53, or 8.8% were somewhat icteric. The histories of all of these were carefully checked, and it was found that none developed severe jaundice, nor was their progress affected.

Inasmuch as prematures are said to be more frequently jaundiced, it is of interest to note that in this series only 21.5% of babies weighing under 5.5 pounds were jaundiced when examined, while icterus was present in 25% of the babies of average weight, 5.5 to 8.5 pounds, and in 18% of the oversized babies. These figures for the small babies are undoubtedly too low, because many were examined on the first day, before jaundice appeared, and others were not removed from their incubators for examination before the seventh or eighth day.

Parmelee has described the underdevelopment of the newborn breast as an index of immaturity. A comparison of the occurrence of icterus and the degree of breast congestion shows a higher incidence of jaundice (29%) in those with deficient breast congestion than in those with average de-

velopment (24%), while of those with excessive congestion, only 15% were jaundiced. This suggests that breast congestion is a better index of immaturity than is an arbitrary weight standard.

Icterus Gravis. Babies who become deeply icteric during the first day of life face a more serious condition than physiologic jaundice. Icterus gravis is often a familial disease. Infants so affected develop an intense jaundice which begins a few hours after birth. The amniotic fluid and membranes may be yellow. The patient is extremely toxic, often feverish and may have convulsions and skin hemorrhages. The blood smear examined in the first days will often show a marked erythroblastosis. Death may occur within the first week. Those who survive, particularly those whose blood contained many erythroblasts, may become edematous or develop an extreme anemia, or both. At autopsy, many nests of hyperactive hemapoietic tissue are found outside the bone marrow, notably in the liver, spleen and kidneys.¹³

The condition is regarded by some as an immaturity of the hemapoietic system with young, easily destroyed red blood cells dumped into the circulation, the jaundice, anemia and edema being varying symptoms of the underlying disease.¹⁴ Others believe it due to toxins which cause hemolysis and which may or may not stimulate a marked bone marrow response accounting for the appearance of the nucleated red cells in the peripheral circulation.¹⁵

An interesting neurologic complication of icterus gravis is kernikterus. Zimmerman, and Yannet¹⁶ have reported cases of icterus gravis which at autopsy showed deep pigmentation of the basal ganglions, and the nuclear masses of the brain, identical with kernikterus described in the adult. One two-year old spastic child with athetoid movements had a history of recovery from icterus gravis, and showed at autopsy degenerative lesions in the areas usually affected by nuclear icterus.

Most observers believe early transfusion is a life saving measure in the treatment of icterus gravis. Blood smears should be made early on all babies becoming icteric on the first day. Intramuscular blood should be given at once, and an intravenous transfusion of about 75cc. of matched blood should be given to those cases showing erythroblastosis.¹⁷ At Cook County Hospital,

some babies have made good recoveries with repeated intramuscular blood injections, and without intravenous transfusion. This is illustrated by the following case:

A. K., 21 years old, who had had one healthy baby, and whose Kahn and Wassermann tests were negative, was delivered on October 12, of a 7 pound 1 ounce girl. At birth, the baby seemed normal, and had normal skin color. Within ten hours, she became definitely icteric, and was deeply jaundiced at 24 hours, when 10 cc. of blood was given intramuscularly. On the following day, the hemoglobin was 80%, although the red count was only 3,200,000; there were no erythroblasts. Two days later, the hemoglobin had dropped to 40%, and four nucleated red cells were seen; the white cell count was 7,650, of which 40% were mature neutrophils, 9% stab forms, 5% eosinophils, 3% basophils, 28% lymphocytes, and 11% monocytes. The baby was very pale; the spleen was palpable. Blood was again given intramuscularly, and repeated in two days. On the 19th, the baby's eighth day, the hemoglobin was 46%, and the differential count showed polymorphonuclears 26%, stab forms 19%, eosinophils 4%, lymphocytes 36%, and monocytes 15%, with 31 normoblasts to every 100 white cells. Blood was again administered, a total of 55 cc. having been given in four injections. After the first week, the baby nursed well, improved in color, and on the 14th day was one-half ounce above birth weight. She continued to improve and was discharged in apparently good condition.

Septic and Luetic Jaundice. Septic and luetic jaundice result from a hepatitis produced by the invading organisms and their toxins. Some authors group them as subheadings of icterus gravis. Fuchs, for example, divides icterus gravis into those cases with erythroblastosis, those with sepsis, and those falling into neither of the first two groups. Sepsis, and syphilis must always be ruled out in a differential diagnosis of severe newborn jaundice. Luetic icterus is not uncommonly accompanied by an erythroblastic response. This fact speaks against the erythroblastosis being the pathogenic factor in the idiopathic cases of icterus gravis. Sepsis producing jaundice most commonly results from an infectious thrombosis of the umbilical vessels. The prognosis in septic and luetic icterus is bad, and the treatment is that of the underlying condition.

Obstructive Icterus. Jaundice from congenital obstruction of the bile ducts is characterized by onset in the first days of life with a gradually deepening icterus, bile-free stools, bile pigment in the urine, usually a direct Van den Bergh reaction, slowly increasing toxicity, hemorrhagic diathesis, and death in a few weeks or months. The lack of jaundice at birth supports Lere-

boullet's idea of an antenatal placental excretion of bile, previously mentioned.

Kass and Osgood¹⁸ recently reviewed the literature on obstructive jaundice. Few cases were found that had lived beyond three months, and none over one year. Holmes¹⁹ has stated that in 84% the basic pathology is such as to preclude hope of surgical relief. In a few cases there is a single obstruction in the common duct permitting anastomosis of the gall bladder and intestine, but by the time diagnosis is made, and surgical intervention attempted, so much liver damage has usually occurred that recovery is not possible.

A high carbohydrate diet protects the liver from damage, and prolongs the life of these babies. Kass's case lived twelve months. While hemorrhages usually develop as the jaundice increases, this is not always so. The mechanism of a hemorrhagic diathesis in icterus is not understood.

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TABLE 1. ICTERUS IN 3,000 NEWBORNS

Age in days.....1	2	3 to 6	Over 6	Total
No. examined.....(597)	(701)	(1610)	(92)	(3000)
Icterus.....No. %	No. %	No. %	No. %	No. %
Slight.....34 5.7	91 13.0	176 11.0	11 12.0	312 10.8
Moderate...19 3.0	77 11.0	273 17.0	5 5.0	374 11.9
Deep.....0 0.0	4 0.5	46 2.7	1 1.0	51 1.7
Total.....53 8.7	172 24.5	495 30.7	17 18.0	737 24.5

TABLE 2. MONTHLY VARIATION OF ICTERUS IN INFANTS

EXAMINED WHEN 2 TO 6 DAYS OLD

	No. Examined	No. Icteric	% Icteric
January.....	290	68	23.5
February.....	226	59	26.0
March.....	162	45	28.0
April.....	168	55	33.0
May.....	203	62	30.5
June.....	246	83	34.0
July.....	...	..	...
August.....	244	74	30.0
September.....	204	69	34.0
October.....	146	52	36.0
November.....	251	78	31.0
December.....	158	23	15.0

EXPERIENCE WITH A "PERIODICITY" METHOD OF ROENTGENTHERAPY IN THE TREATMENT OF BUCCOPHARYNGEAL CARCINOMA

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It is generally recognized that the time factor is of great importance in the conduct of irradiation therapy for malignant neoplasms. By what means the time factor may be employed to maximum advantage in irradiation therapy has not as yet been definitely determined.

A number of years ago Miescher¹ called attention to the fact that following a given dose of x-radiation to the skin, two or three successive waves of erythema could sometimes be observed. The first wave is faint and appears within 24 hours. The last wave is more pronounced and appears usually by the 60th to 70th day.

Coutard has observed successive periods of exacerbation in inflammatory reactions following daily doses of 200r of x-radiation. In the course of clinical and experimental observations upon the reaction of the skin to irradiation we have observed these "periodic" exacerbations of erythema and of erythema and exfoliation. Whether or not this phenomenon is of importance in the irradiation therapy of superficial and deep neoplasms, cannot at present be definitely stated. Coutard has suggested that it might be of importance. In summarizing the results of 379 cases treated by the daily fractionation method he has observed a definite increase in the percentage of five year

Read before the Section on Radiology of the Illinois State Medical Society, Peoria, May 18, 1937.

Patient*	Lesion	Therapy					TOTAL	Results
		1-6 day	13-15 day	42-45 day				
Male, 51 C.V.	Intrinsic carc. left vocal cord	1-6 day 2650 r	13-15 day 1500 r	42-45 day 900 r			5000 r	Clinically well, 10 mos.
Male, 44 D.S.	Intrinsic carc. ant. part larynx	1-4 day 1500 r	13-14 day 1000 r	25-29 day 2000 r	37-38 day 1000 r		5500 r	Clinically well, 2 yrs.
Male, 75 G.A.	Carc. left tonsil. 2cm. diam.	1-5 day 2350 r	13-18 day 2350 r	26-28 day 1500 r	40-41 day 1000 dr		7200 r	Primary lesion disap- peared. Cerv. node met. appeared at end of treatment. (Dead.)
Male, 52	Carc. soft palate, 3cm. diam.	1-6 day 2500 r	13-16 day 2000 r	23-27 day 2000 r			6500 r	Lesion regressed but did not disappear. (Dead.)
Male, 44 L.B.	Carc. inner aspect left cheek 5cm. diam. Could not open mouth	1-5 day 2400 r	12-16 day 2400 r	24-26 day 900 r			5800 r	Only slight temporary improvement. Pa- tient dead
Male, 77 W.E.	Carc. floor of mouth left side 2x1cm.	1-5 day	14-16 day	24-25 day	36-38 day		7100 r	Primary lesion healed for 3 mos. but left cervical metastasis has appeared
Male, 68 F.S.	Carc. post rt. base of tongue 2 cm. in diam. Large metastatic mass, rt. cerv. region	1-6 day 2400 r	21-24 day 2000 r	37-38 day 1000 r	41-43 day 1500 r	51-52 day 1000 r	7900 r	Metastatic mass has regressed. Prim. le- sion stationary for 6 mos. (Dead.)
Male, 57. F.P.	Carc. involving en- tire ant. part of tongue. Ext. bilat. cerv. metastases	1-4 day 1700 r	13-15 day 1500 r	30-34 day 2000 r	40-43 day 1500 r	69-75 day 2200 r	8900 r	Marked regression of metastases. Patient died
Male, 52 P.D.	Carc. left border of the tongue 2 cm. in diam. Treat. by radium with regression. Left upper cerv. metastatic mass 5 cm. in diam. X-ray to meta- stasis	1-4 day 1500 r	12-13 day 1200 r	26-29 day 1600 r			4300 r	Rapid advance of le- sion after temp. re- duction in size. Patient died
Male, 62 C.H.	Large ulcerating carc. left base of tongue, epiglottis, left pyriform fos- sa, left false cords. No palpable met- astases. Hoarse.	1-5 day 2500 r	12-14 day 1500 r	24-28 day 2000 r	38-41 day 1750 r	50-51 day 750 r	7750 r	Patient clinically well, with no evidence of active disease. Voice normal 2 yrs. after treatment
Male, 66 A.G.	Ulcerating carc. at base of tongue, 1.5cm. in diam.	1-4 day 1600 r	13-16 day 1600 r	26-29 day 2800 r	40-41 day 1200 r		7200 r	Marked improvement for 3 mos., then re- currence of lesion. Patient died.
Male, 64 H.S.	Large fungating carcinoma of epi- glottis	1-5 day 2500 r	12-16 day 2500 r	24-27 day 1500 r	38-40 day 1000 r		7500 r	Partial regression of lesion for a few weeks, then resump- tion of growth. (Dead.)
Male, 62 C.K.	Large fungating squamous cell carc. in epiglot- tis and base of tongue and ex- tensive bilat. cerv. metastases	1-5 day 2800 r	13-16 day 2000 r	24-27 day 2000 r	50-51 day 700 r		7500 r	Brief immediate par- tial regression only. Patient died.
Male, 72 N.D.	Carc. of epipharyn- yx with intra cranial extension	1-6 day 1800 r	16-18 day 900 r	27-32 day 2800 r	44-47 day 1800 r		7300 r	No clinical evidence of disease 16 mos. after treatment.

*Table brought up to date, Nov. 1937.

survivals in those groups, whose total treatment periods were 13 to 17 days, 24 to 29 days and 39 to 50 days; roughly these periods are multiples of 13 day periods. A system of periodicity in the chronology of therapy was thus suggested.

In the Irradiation Clinic of the Division of Roentgenology of the University of Chicago Clinics a small series of patients presenting for the most part very advanced carcinomas of the bucco-pharyngeal cavity were treated according to a periodic chronology. Daily or diurnal treatments were given for 4 to 6 days as an initial series; on the 12th to 14th day following the first treatment a second series over 3 days was given, and again on the 24th and 26th day and a third series and again in some cases on the 38th to 42nd day. In most instances the largest doses were given in the first series, the next largest in the 3rd series. Total doses varied from 5,000 to 8,900r measured in air. Two opposing portals were used with most of the irradiation given on the side of the lesion. All irradiation was given at 200Kv., 3 to 10Ma., 50 to 80cm. F.S.D., $1\frac{1}{4}$ mm Cu and 2 mm Al filter. Details are given in the accompanying table. Biopsies were obtained in all cases and showed varying types of large cell epitheliomas.

Of the immediate results reported in 14 cases 8 are dead of the disease or present active lesions which cannot be controlled a few months following treatment. Of the 6 which are alive, (May 1937) 2 had small lesions, 2 had a very large lesion which has been controlled for 10 to 18 months, 1 has a lesion which has remained stationary and 1 presents a healed primary growth with developing metastases in the cervical nodes.

From this brief and limited experience with a periodicity method of treatment the following impressions are gained:

1. The systemic reactions were less pronounced than would have been the case if similar doses had been fractionated in daily consecutive treatments. This is in all probability due to the rest periods. These periods were also of distinct psychologic benefit to the patients.

2. A periodic system of therapy is an economy of time entailing a smaller number of treatment days than a similar dose fractionated in daily consecutive treatments.

3. No evidence was obtained to indicate that the periodicity method as practiced might afford a very marked difference in results in the treat-

ment of far advanced and large bucco-pharyngeal carcinomas. The good immediate results obtained, might also have been obtained by the daily consecutive mode of treatment over total periods of 18 to 42 or 60 days.

Experience with the method, however, is so limited that no definite conclusions as to its relative efficiency are now possible. That some tissue responses to irradiation take the form of recurring periodic phenomena is a fact and certainly suggests a course for future investigation.

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DISCUSSION

Roswell T. Pettit (Ottawa, Illinois): I might say I have had two or three cases of this type and, as Dr. Brunswick said, it is a matter of impression. In my experience, it has been extremely limited, at the outside not more than four or five cases, one of those cases being carcinoma of the larynx, with big metastasis of the neck. The thing completely disappeared. It was very striking, but I think I have observed just as striking instances with the fractionated system of treatment over a prolonged period of time, a small amount each day. As I understood Dr. Brunswick, those measurements were made in air.

Dr. Brunswick, Chicago (in closing): I just want to emphasize again, as Dr. McNattin mentioned, that this "periodicity" which we practiced is entirely empirical. How do we know this should be done every two or three weeks? I think we all agree that we would like to improve the results in irradiation therapy of bucco-pharyngeal carcinoma by external irradiation. When you have two cases that look alike grossly, microscopically, and you induce a severe skin and mucous membrane reaction in both, when one of them goes away and stays away for a while, and the other regresses partially and immediately proliferates again, you cannot help but want to cast about for some way of improving the treatment.

This "periodicity" suggested by Miescher's work and put into more concrete form by Coutart might be a procedure which will give us better results in the future.

The hemogram in liver disease may closely resemble that of pernicious anemia. The author calls attention to the importance of considering chronic liver disease, cirrhosis in particular, in the differential diagnosis of mild and moderate grades of Addisonian anemia. Rosenberg, D. H., *Am. J. Digest. Dis. & Nutrition* 3:639, 1936.

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MUCOCELES OF THE APPENDIX

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Definition: Mucocoele of the appendix is an accumulation of a mucous or mucoid secretion in either the lumen, the wall or the mesenteric attachment of the vermiform appendix.

Historical: The first reference in the literature was made by Virchow¹ in 1863. Rokitan-sky², in 1869, described 4 cases which he erroneously considered colloid carcinoma of the appendix. Fere³ was the originator of the term mucocoele, in 1877. From that time to the present, many references are found in the literature of case reports, and also experimental and pathological study.

Frequency: A recent case of our own at the Cook County Hospital focused our interest upon this rather infrequent disease.

A careful investigation of the records of the institution has revealed the following statistics:—From January, 1929, to January, 1937, 9180 post-mortems have been performed. In only 4 instances or .043% have mucocoeles of the appendix been found. From July, 1928, to January, 1937, 9535 surgically removed appendices have been examined, of which 22 or 0.23% of the total were mucocoeles.

These figures give one an idea of the relative infrequency of the disease.

Castle⁴ in a total of 13,158 autopsies found 28 cases or about 0.2%.

Corning⁵ out of 925 appendices sent for pathological examination, found only 5 mucocoeles or 0.68%.

Mayo and Fauster⁶ reviewed the surgical cases encountered at the Mayo clinic from 1917 to 1930 and found 76 mucocoeles in 31,200 cases in which appendectomy had been performed or 0.24%.

Etiology: Occlusion of a portion of the appendiceal lumen with holding back of the glandular secretion is probably the underlying cause. When malignant changes occur, however, the pathological picture changes to one of a diffuse pseudomyxomatous peritonitis. Phemister⁷ attempted to produce cystic formation of the appendix by artificial obliteration of the lumen of

the appendix. In all but one, gangrenous appendicitis developed. In the single uncomplicated case, the appendiceal lumen became restored.

ANALYSIS OF COOK COUNTY HOSPITAL CASES

Clinical Diagnosis:

Interval appendicitis	9	
Acute appendicitis	5	
Chronic appendicitis	3	
Uterine fibroids	2	Incidental to gynecological operations
Ovarian cyst	1	
Chronic salpingitis	1	
Gastric ulcer	1	
Luetic aortitis	1	Incidental to post-mortem findings
Acute yellow atrophy of the liver.....	1	
Diabetic coma	1	
Pulmonary T B.....	1	

Total26

From the 26 cases reported it is noted that 9 were latent cases, producing no apparent clinical symptoms.

SEX:

Males17

Females 9

AGE:

1-10 3

11-20 5

21-30 5

31-40 5

41-50 3

51-60 4

61-70 1

Total26

LEUCOCYTE COUNT: 7,350 to 22,000. Average 12,454.

A careful clinical analysis revealed no diagnostic features of the disease.

Case Report: W. L., Male, aged 32 years, was admitted to the Cook County Hospital October 28, 1936.

Present Complaint: Tenderness in right lower quadrant of 2 weeks' duration.

Onset and Cause: Patient stated that he was well until 1932 when he suffered an attack of pain in the right lower quadrant. This was severe enough to double him over, and remained of a constant character. He was confined to bed for four days during which time he felt nauseated on different occasions, and vomited once or twice. He was able to be up and about after the fourth day. From then until the present illness he had been enjoying good health. Two weeks prior to his admission to the hospital he was again taken ill with the identical reduplication of his symptoms. After four days he was again able to be up and around but due to the persistent dragging pain in the right lower quadrant he deemed it advisable to enter the hospital.

In the history of the case, only the following facts were elicited: Jaundice 10 years ago, diagnosed as acute catarrhal jaundice. As a child he had whooping cough and otitis media of both ears.

Physical Examination revealed a well nourished white male who did not appear acutely ill. Temperature 98.4, Pulse 74, Resp. 18, Blood Pressure 140/85. With the exception of a tenderness on deep pressure over McBurney's point, the complete physical examination was negative.

Laboratory: Blood: Leucocytes 9,800; Polymorph 86%; Lymphocytes 12%; Monocytes 2; Hemoglobin 95%.

Urine: Sp. gr. 1.018; Acid; Albumin negative; sugar negative; blood negative. Microscopic examination revealed no blood cells or casts.

The diagnosis of interval appendicitis was made and operation performed.

At operation the appendix was found partially buried in the serosa of the cecum. At the junction of the middle and distal third was found a stricture of the appendix, distal to which were many bean to grape sized clear mucinous cysts extending into the meso-appendix.

The patient left the hospital on the tenth post-operative day, and was feeling well when last seen 3 months later.

Pathological Report: Appendix 6X 0.5 cm. The serosa is slightly injected and the wall slightly thickened. The mucosa gray-tan and at the junction of the

when atypical appendices are removed at operation.

5. The prognosis of these cases is good, with the exception of rare malignant changes which as a rule are primarily ovarian tumors with secondary metastasis to the appendix.

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IMPROVED POSTOPERATIVE CARE

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Postoperative management of patients with abdominal operations has improved immensely in the past 20 years. Having occasion to compare the postoperative course of patients operated on about 1910 with those of 1930, E. M. Heacock, M. D., F. A. C. S., and the author decided that even though there had been marked improvement, there was still much to be desired. We had been able to reduce the mortality and increase the postoperative comfort of patients with a peritonitis or localized abscess in the abdomen by withholding fluids by mouth and giving sizable amounts of morphine, so we decided to try this management in our abdominal surgery routinely. From the first, our results were very gratifying.

Routinely, up to that time, we had written postoperative orders for saline only if the patient was badly or moderately dehydrated or had an infection. The matter of administration of morphine depended a good bit on the patient's ability to complain, being ordered gr. 1/6 or gr. 1/4 P. R. N., and thus the nurse or interne used their own judgment, which was tempered frequently by teachings or ideas that many addicts are born by too generous administration of morphine postoperatively. The most important part of the postoperative treatment was still left entirely to the judgment of the nurse, for we wrote an order

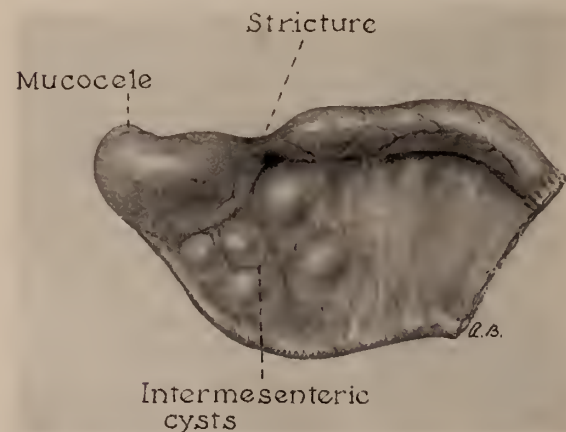


Fig. 1. Drawing of the surgical specimen. Note stricture in the distal third of the appendix associated with the dilated end.

The numerous cysts of the meso-appendix all contained a clear straw colored fluid.

middle and distal third, there is a fibrous stricture obliterating the lumen for a distance of 4 mm., beyond which the lumen is patent. There is a soft cyst 2 cm. in diameter attached to the serosa at this junction, also a piece of soft, gelatinous tissue measuring 1.5 cm.

Microscopic: Mucocoele of the tip of the appendix and mesoappendix, with marked fibrosis of the sub-mucosa.

CONCLUSIONS

1. Mucocoeles of the appendix are very uncommon composing only 0.23% etiological cause of diseases of the organ.

2. There are no clinical symptoms or signs which give any diagnostic aid.

3. 9 or 34.6% of the cases in our series were incidental operative or post mortem findings.

4. The condition should be kept in mind

for "fluids as tolerated". This left the administration of fluids by mouth entirely up to the judgment of the nurse who usually had no criterion upon which to base her judgment on the patient's ability to tolerate fluids, except to give them, and if vomiting ensued, to have fluid withheld another few hours. It has been our experience that patients usually ask for water as soon as they awaken from a general anesthetic, not because of dehydration, but because of the mouth and throat being dry and irritated following the preoperative medication and anesthetic drug. This request for water probably always occurs during the time the patient is still suffering from the postanesthetic nausea and the giving of fluid into the stomach at this time is worse than useless, because the fluid is vomited and the postoperative discomfort caused by this physical effort is immense and the upheaval in the abdomen certainly does not help localize infection or promote hemostasis. It is our opinion also, based on the observation of patients postoperatively, that once vomiting has started, it is likely to recur, and a patient who does not have vomiting in the first day after an anesthetic and operation, because the stomach has been kept empty, will tolerate fluids much more comfortably and freely on the subsequent day than a person who has been given fluids and has been unable to retain them.

With this in mind, it was decided to permit no fluids to be taken by mouth for a minimum of 24 hours after any operation where the abdomen was invaded. Before the 24 hours had passed the patient was observed and at times the period of withholding oral fluids was extended 8 to 24 hours depending on the patient's condition, whether there had been much postoperative nausea, whether there had been vomiting or if there was any evidence of distention. On any operation where the bowel had been traumatized by the removal of appendix, the freeing of adhesions, or by more than the minimum of handling in packing the bowel away from the pelvis, we considered that oral fluids should be withheld 36 hours, with a possibility of extending this period on the same basis as the previously described cases. On all cases where there was infection either from an appendix with exudate or free pus, from a pelvic abscess or possibly from a cervical stump that had not been carefully handled, we found that 48 hours should be the

minimum time elapsing before the patient should be permitted to take fluids into the stomach, with a possibility of extending this period another day or even 2 days if it was considered necessary, because of nausea, distention, or gas pains.

During this period in which the patient was not permitted to drink fluids, the dryness of the mouth and throat were relieved by permitting the patient to rinse the mouth freely with cold water or to suck ice chips, but each patient was cautioned not to swallow the fluid. Each patient was talked to, and the purpose of the starvation was explained. They were told that no amount of water that they could drink would completely quench their thirst because the discomfort in the throat and mouth was due to the anesthetic and not due to lack of water; that fluid taken into the stomach would more than likely cause them to vomit and to have gas pains and distention and if they were willing to recognize the dryness in their throats as a minor discomfort that could be almost entirely relieved by rinsing the mouth or sucking ice, that they would more than likely escape with no vomiting or gas pains or distention. It was surprising to see how well patients cooperated and how very few objected.

Much has been written in recent years on the proper provisions of water balance, mineral balance, caloric requirement and maintenance of nutrition in the surgical patient. Collier has called attention to this and has made some very useful contributions to surgery in measuring the fluid loss. We have attempted to provide the patient with at least 3 liters of fluid in the first 24 hours, one liter of this to replace the immediate postoperative fluid loss, which has been estimated at one liter; the other 2 liters at about 8 hour intervals to provide for the normal fluid loss, and on subsequent days have given at least 2 and sometimes 3 liters each 24 hours until oral fluids are permitted. This fluid was administered as normal salt solution which provided 27 gms. sodium chloride during the first 24 hours. Taking 15 gms. as the normal need, the additional salt given during the first day provided for excess chloride loss during surgery and postoperative perspiration. On subsequent days with a 2 liter intake, only 18 gms. of sodium chloride was given to satisfy the 15 gms. normal, so we felt that no patient was being overloaded with sodium chloride.

To each liter of saline solution was added 50

gms. glucose to provide rapidly for caloric requirement, the 150 gms. glucose in the first day providing calories for the patient's immediate needs. Where there was any fear of administering an excess of chloride, we used 5% glucose in sterile water on subsequent days, but we had no patient where edema or nephritis was recognized as being due to excessive chloride administration.

On all of our cases the fluid was administered hypodermically. We have no objection to intravenous administration except that fluids so administered must be properly buffered and the technique is not as simple as the hypodermic method. By using novocaine at the site of injection and with a patient properly under the influence of morphine, we have had very few complaints. Most of our difficulty in this method was due to the occasional slow absorption, but these cases were too few to discard the hypodermic method.

Wolfer has recently called attention to the balanced diet and has shown that dietary deficiencies in the surgical patient are not rare. We have made no provision for vitamin or protein intake in the first few days, believing that we get our patients on a general balanced diet very rapidly by this method as compared to the frequent continued vomiting, distention and discomfort which our patients experienced when oral fluids were administered too soon. As soon as we feel that fluids by mouth can be tolerated, hot tea and water is given in small amounts, the patient being advised to take only small sips at first. In 8 hours, if tea and water are taken freely, general liquids are given. Broth and greasy soups are not encouraged, because of their low nutritive value and great possibility of causing discomfort. Milk and so-called cream soups are encouraged. If the patient tolerates this fluid well for 24 hours, a light diet; puddings, cereal, toast, etc., is given and then by the next meal a general diet is provided if the patient cares for more food.

The question of how much morphine to administer postoperatively is still discussed, but it seems that most surgeons now agree that it is a very useful and humane postoperative drug. We have used no set procedure, believing that an order for morphine gr. 1/6 or gr. 1/4 every 6 hours might be excessive for some patients. We ask for its administration P. R. N. freely, advising the nurse to give the first injection when

the patient awakens from the anesthetic, and to be guided by two factors; first, the patient must be comfortable; and second, if the respiratory rate falls below 12 to notify the interne or the surgeon. We have had only one case where we felt that morphine caused the respiratory rate to be low and this patient had a respiratory rate of 6 per minute when she came from surgery following resection of an ovarian cyst and appendectomy. Morphine gr. 1/6 had been used preoperatively. She received no more morphine and it is needless to say that it would have been ill-advised to order morphine every 6 hours for this patient and leave her to be cared for by a busy nursing staff who were interested in carrying out the doctor's orders.

We feel that morphine is of value not only because it gives the patient rest and freedom from pain and makes them less aware of outside disturbances, but it is also distinctly an aid in combating intestinal activity. By stimulating the small bowel it evidently maintains sufficient tone to prevent distention and by causing relaxation to the large bowel, the desire to empty the bowel or the sensation of gas pains is prevented. Since the large and small bowel do not both become active at the same time and drugs which stimulate one, relax the other, it would seem that if the small bowel can be maintained in a state of mild stimulation, the large bowel in the meantime being kept at rest, there can be no sensation of wanting to go to stool or to pass gas or large bowel distention. Physiologists may disagree with our explanation or interpretation, but they cannot well disagree with our clinical observations, that morphine judiciously administered in frequent intervals causes the patient to have a much more comfortable abdomen.

Certainly not many patients become addicts due to postoperative morphine administration. We have felt that a patient who is given sufficient morphine so that she does not need to beg for it, is much less likely to know just how much relief it gives and consequently much less likely to remember vividly what morphine can do.

It has been our practice to avoid if possible giving enemas during the early postoperative period. So frequently an enema designed to give relief is without the desired result and more than occasionally adds to the patient's discomfort. Naturally the injection of fluid into the rectum causes irritation. It is given for the pur-

pose of promoting large bowel activity and we have felt that the less large bowel irritation our patients have, the more comfortable will be their convalescence. Certainly the majority of surgeons have discarded the high pressure irrigations designed to force fluids across the transverse colon and use instead where they feel that an enema is necessary a low relatively nonirritating rectal instillation or a return flow mechanism so no pressure is exerted high in the colon. Colonic flushings are difficult enough to tolerate when the patient is in good health and to subject a patient recently operated on to this procedure without being able to promise great relief seems barbaric.

We have used a rectal tube for the relief of pressure by gas when the patient has lower bowel discomfort. Usually about the third or fourth day as the morphine is gradually withdrawn, the patient may have a spontaneous bowel movement. If not, we do not hesitate to wait another day and then if the bowels have not moved, a low enema is given, almost always with excellent results. Following this, daily low enemas or mild cathartics are used, the comfort of the patient being the governing factor.

Proctoclysis or rectal feedings have had no place in our recent treatment. There is considerable doubt if much nutrient material is absorbed and certainly the discomfort of the procedure, the difficulty with which a successful instillation can be made, and the irritation to the large bowel are enough to discourage this method of administering fluid and food when there are other easier methods.

In adopting this method of treatment we have felt that we are aiding and cooperating with the natural body forces to bring about recovery. In every case of intestinal infection or trauma, nausea and vomiting are usually the first symptoms to appear. The body forces are aimed at getting the stomach empty and keeping it so. Why should we encourage the patient to fill her stomach before this period is passed? In every case of abdominal infection the natural forces cause the bowel to be quiet. An abdomen with peritonitis or local abscess is a silent abdomen. Why should we encourage activity by feeding and by enemas? Rather, we should encourage rest, which we attempt to do by morphine. Then when the necessity for an empty stomach and a quiet bowel is past, the patient can logically be brought

along more rapidly toward a full general diet.

In only one case of a fairly large series have we found it necessary to use a duodenal siphon drainage tube. The procedure certainly gives excellent results and we would never hesitate in its use, but so few of our cases have had distention of more than a very moderate amount and so rarely do they have vomiting that we have felt that the installation of duodenal suction drainage with its moderate discomfort, its more or less large amount of equipment should be avoided if abdominal comfort can be obtained by simpler methods.

In fact, it is the simplicity of the method that we advocate, that makes it difficult for us to impress the average surgeon that he is treating his cases any different than we do ours. Most men use saline and glucose, nearly all have morphine given, very rarely does any one order an enema soon after operation and fluids by mouth are always withheld for a time. If we could only develop some complicated scheme or apparatus to sell our method, more attention would be given to postoperative care. But try as we might, we have been unable to make the provision of postoperative comfort spectacular and consequently have had only very few converts. We feel that regardless of the method used, a patient is entitled to comfort, and in the vast majority of instances it can be provided by a simple commonsense application of general principles, and if the surgeon would apply himself as conscientiously to provide comfort for his patient after surgery as he does to doing nice operating, both he and the patient will have fewer postoperative headaches.

I am presenting two series of cases. In each series the cases are consecutive abdominal operations but there is a lapse of about 50 cases between the two series because it took considerable time and teaching of nursing staff and internes to get complete cooperation.

In the first series fluid was given when the nurse or intern felt that it might be tolerated. In the second series it was withheld by mouth for a definite and longer period of time. In the first series, postoperative vomiting was expected, in the second series it was hoped that no vomiting would occur. In the first series we expected distention and gas pains, in the second series we usually found them absent or very mild. A

presentation by table does not begin to do justice to the dramatic difference in the comfort of the patients in the two groups. The second series could be made to look much better if it were taken at the present date instead of several years ago, because even with careful watching and instruction of nurses, many a busy night nurse would give the patient a glass of water and read the orders on the chart afterwards and thus

occasionally upset the routine. It was felt, however, that this presentation should include two series relatively near together so that improved anesthesia, operating room technique and hospital management should not effect the difference.

Only fifty cases are presented in each series, the percentages by comparison are the same as for larger groups in each series and the presentation is easier.

KEY TO OPERATIONS

- | | | | |
|--------------------------|-----------------|-------------------|------------------------|
| 1. Acute Appendicitis | 3. Hysterectomy | 5. Salpingectomy | 7. Strangulated Hernia |
| 2. Interval Appendectomy | 4. Oophorectomy | 6. Pelvic Abscess | 8. Cholecystectomy |

TABLE 1, SERIES 1

Operation	Patient	Min. Spent in Operating	Hours Oral Fluid With- held	Liters of Saline	Liters of Proc.	Amt. of Morphia	Gas Pains	No. of At- tacks of Vomiting	Post Op. Distention	Days Until Enema or Spont. B.M.	Hosp. Days Post. Op.
1	B.W.	48	5	0	1	0	xx	0	xx	2	11
1	E.S.	30	10	1	1	3/6	xx	0	0	2	11
1	L.G.	60	10	0	1	2/6	xx	x	0	1	13
1	F.J.	18	1	0	0	3/6	xx	0	x	3	17
2, 4, 5	A. K.	45	12	1	4	3/6	xxxx	xxx	xxx	1½	16
1	C.M.	45	10	1	0	0	xxx	0	xx	2	14
1	C.M.	35	6	0	2	1/8	xxx	x	xx	1	10
1	E.B.	25	8	0	3	1/6	xx	x	xx	1½	14
1	G.E.	30	6	0	2	3/8	xxxx	xxx	xxx	3	15
1	L.B.	40	7	1	2	2/6	xxx	0	xx	1½	13
3, 4, 5	H.J.	96	3	1	2	6/6	xxx	xx	xxx	3	14
6	L.S.	35	3	3	1	6/6	xxxx	0	xx	1½	24
2, 4, 5	I.S.	55	7	1	2	4/6	xxxx	xx	xxx	3	18
1	J.S.	25	7	1	2	3/8	xxx	xx	xx	2	23
4	E.H.	37	10	1	2	2/6	xx	xx	xx	2	13
2, 5	J.M.	55	4	1	1	3/6	xxx	x	xx	1	13
7	W.A.	55	5	1	1	0	x	xx	x	1	14
2, 4, 5	A.R.	50	4	1	2	3/6	xxx	0	xxx	2½	16
5, 4	F.J.	60	4	2	1	2/8	xxx	xxxx	xxxx	1½	18
1	S.S.	30	6	0	1	0	xx	x	xx	1	12
4	I.M.	30	2	0	1	2/6	xxxx	xxxx	xxxx	1	14
2, 4, 5	M.M.	70	3	1	2	3/6	xxx	x	xxxx	1	14
1	N.R.	28	5	1	0	0	xx	xxxx	xx	3½	10
2, 3, 4	H.S.	54	5	1	1	6/6	xxxx	xxxx	xxxx	1	22
1	E.A.	30	6	1	0	3/6	xx	xxx	xx	2½	14
1	V.B.	18	18	1	1	4/6	xx	xx	xx	2	14
2, 4	A.H.	50	5	1	1	3/6	xxxx	xxxx	xx	1	17
1	V.S.	26	6	0	1	0	xxx	xxx	xx	2	10
4, 5, 6	E.S.	60	3	2	0	9/6	xx	x	x	1½	20
1	B.C.	20	5	1	0	0	xx	x	0	1	10
1	H.H.	30	7	1	1	2/6	0	x	0	1½	12
3, 4, 5	E.N.	65	6	1	1	2/6	xxx	xx	xxx	1½	20
1	E.S.	22	5	1	2	0	xx	xx	0	2	12
2, 5	M.H.	30	1	2	0	4/6	xx	0	xx	3	17
2, 4	E.M.	40	4	0	1	3/6	xx	xx	xx	2	14
1	M.C.	40	8	0	1	2/6	xxx	xx	xx	2	11
1	A.L.	30	12	1	0	3/8	xx	x	0	2	13
3	K.M.	75	5	1	2	2/4	xxx	xxx	xxx	1	19
2, 4	M.G.	30	10	0	1	1/6	x	xx	0	2	14
4, 5	L.W.	60	12	1	1	4/6	x	x	x	1	14
2, 4, 5	V.W.	60	8	1	1	3/6	xx	xx	xxx	2	12
1	A.G.	35	8	0	1	2/6	xx	0	xx	2	11
1	E.T.	26	9	0	1	3/6	xxx	0	xxx	1	12
1	M.R.	40	6	0	1	2/6	xx	xxx	xx	2	14
1	C.B.	25	9	0	2	3/6	xxxx	0	xx	2	12
1	G.L.	38	5	1	1	0	xx	0	xx	2	14
2, D&C	M.K.	70	18	1	1	1/6	x	0	x	S1	21
5	M.H.	40	2	0	2	3/6	xx	xx	xx	4	22
1, 4	P.C.	65	18	0	1	3/6	xx	xxx	xx	4	14
3	S.M.	70	12	1	1	0	xx	xxx	x	2½	20

TABLE 2, SERIES 2

Operation	Patient	Min. Spent in Operation	Hours Oral Fluid With-held	Liters of Saline	Liters of Proc.	Amount of Morphine	Gas Pain	No. of Attacks of Vomiting	Post. Op. Distention	Days Until Enema or Spont. B. M	Hosp. Day Post. Op.
1	A.M.	45	24	3	0	3/6	x	0	x	6	15
5	C.L.	35	24	2	0	3/6	x	0	0	5	15
1	A.G.	40	20	2	0	3/6	x	0	x	4	13
1	F.W.	35	22	2	0	5/6	xx	0	0	4	10
3	A.E.	70	24	3	0	8/6	x	0	xx	2	23
8	M.G.	50	30	3	0	4/6	x	0	x	5	18
1	E.K.	45	40	6	0	7/4	xx	0	x	5	20
1	M.S.	50	24	3	0	2/6	xx	x	0	3	10
2, 8	E.S.	55	8	3	0	5/6	x	xxx	x	3	18
1	W.R.	20	36	3	0	5/6	x	0	x	6	29
1, 7	C.S.	70	36	5	0	8/6	0	0	0	S6	16
1	E.K.	25	48	5	0	5/6	x	0	0	3	12
2	V.F.	50	10	1	0	5/6	xxxx	xx	xx	3	14
2, 8	M.T.	70	40	5	0	4/6	xx	xx	0	3	14
1	C.D.	20	12	2	0	3/6	xxx	x	xx	2	12
2, 3, 4, 5	V.D.	65	10	5	0	6/6	xxxx	xx	xxx	4	15
1	M.M.	30	15	2	0	3/6	0	0	0	4	11
7	G.R.	35	2	0	0	2/4	x	x	0	S3	13
2, 5	M.R.	45	32	3	0	5/6	xx	0	0	5	12
1	E.R.	35	24	2	0	0	0	0	0	5	10
3, 4, 5	D.S.	70	24	3	0	4/6	xx	0	xxx	2	18
1	M.U.	40	72	10	0	8/6	0	0	0	4	28
7	S.M.	45	24	4	0	6/6	x	x	0	4	20
4, 5	F.T.	45	48	5	0	4/6	0	0	0	3	16
4, 5	M.M.	30	7	2	0	4/6	xx	xx	xx	2	14
2, 4	E.K.	35	32	3	0	4/6	x	0	x	2	14
1, 4	J.M.	70	10	1	0	3/8	xx	0	0	2	11
8	A.W.	60	11	2	0	5/6	x	0	x	2	14
4, 5	J.W.	50	34	4	0	3/6	1	0	xx	2	10
1	G.T.	35	30	3	0	2/6	x	xx	0	3	9
8	K.S.	65	30	5	0	6/6	0	0	0	2	21
1	E.H.	40	48	3	0	1/6	0	x	0	2	10
2, 4, 5	D.O.	35	4	1	0	4/6	xxxx	xx	xx	2	12
1	L.B.	40	50	4	0	3/6	x	0	0	5	14
4, 5	A.Y.	60	30	4	0	4/6	xx	x	x	3	16
1	J.K.	50	50	6	0	7/6	x	0	0	7	21
1	M.L.	15	36	4	0	4/6	x	0	x	4	14
1	G.S.	30	40	5	0	5/6	0	x	xx	5	21
3	G.S.	65	48	6	0	7/6	0	0	0	4	14
3	E.W.	70	48	6	0	6/6	x	0	0	4	16
8	R.S.	60	50	6	0	4/6	x	0	x	5	20
3, 4, 5	M.S.	30	36	4	0	5/4	xx	x	x	4	15
1	L.D.	25	48	5	0	4/6	x	x	x	3	10
1	W.K.	25	48	6	0	6/6	x	0	0	4	8
1	A.T.	35	52	6	0	5/4	0	x	0	3	14
1	E.H.	35	36	4	0	4/4	x	0	xx	4	10
2, 4, 5	E.S.	35	50	6	0	5/6	0	0	x	4	13
1	L.T.	25	52	6	0	4/6	0	x	0	3	10
1	L.O.	30	40	4	0	3/6	x	0	0	4	10
1	A.G.	35	52	6	0	6/6	0	x	x	5	11

TABLE 3, SUMMARY

APPROXIMATE AVERAGES ARE GIVEN

Series	Hours until oral fluid	Liters Glu. & Saline	Liters Procto.	Amt. M.S.	Gas Pns.	Vom. No. Att.	P. O. Dist.	Days before Enema	Hosp. days P. O.
I									
II	33	4	0	%	1%	1/2	1	4	15

In the two series covering relatively similar operations, the difference in postoperative comfort measured in distention, gas pains and at-

tacks of vomiting is striking. The actual difference however, is greater than can be shown in a table made up strictly from the nurses' records. Gas pains as recorded here cannot be recorded according to their severity, so we have tabulated the number of times that the nurse has made a record of the patient's complaint. From the clinical observations we have observed that the distress has been much less in the second series. Similarly with the attacks of vomiting; they were much less severe in the latter series so that a figure of 13/5 in Series 1 compared to 1/2 in

Series 2 does not give a true comparison, but the difference is sufficient, based on these figures, to justify the newer method. Distention here has been recorded from the number of times it was noted in the nurses' record and the ratio is 2 to 1. Actually, however, the severity from our observations has also been greatly reduced. From the averages, it will be noticed in Series 2 that gas pains, distention and attacks of vomiting have been reduced to one-half of the figures in Series 1; the hours for withholding oral fluids have gone up from an average of 7 to an average of 33. Liters of saline or saline with glucose have gone up from a minus 1 to 4; no proctoclysis was given in Series 2; an average of 1 1/5 liters appears in Series 1. Morphine administration has doubled from an average of 2/5 gr. to 4/5 gr. The number of days before an enema was given has doubled. So speaking relatively, by withholding oral fluids 26 hours longer than formerly, doubling the amount of saline and glucose, doubling the amount of morphine and doubling the number of days that enemas were not given, we have been able to divide by 2 the attacks of vomiting, the frequency of gas pains and the distention.

The postoperative hospital stay in these two series is exactly the same, partly this was due to the habit of keeping a patient about a certain length of time. We have now reduced these figures and have thus added economic comfort to the list of benefits.

One other benefit we should like to add to this list and if it has any basis it will certainly be of extreme importance. If worry and tension and hearing complaints are reflected in the coronary vessels, then certainly we should benefit, for it has been our experience that when the patient is comfortable, the surgeon can sleep.

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DISCUSSION

Dr. Otto S. Pavlik, Chicago: The water balance that has been discussed so much of late all over the country is nothing new. I remember back in 1904 when I was one of Professor Dudley's assistants in the operating room, we used to fill the abdomen with saline solution. We had to hold up the sides of the abdomen to keep the fluid in while Dudley did the suturing. About that time Murphy came out with his Murphy drip-proctoclysis. Of course it was crude when compared with the present way of giving fluids. The credit for this work belongs to the men at Ann Arbor who for the last two or three years have worked it out on a scientific basis.

The preparation of the patient before operation is important. When you consider the withdrawal of fluids, before the operation, the loss by perspiration during the operation and in a warm bed following, they should receive enough fluid in one way or another to make up the loss, to maintain the water balance.

As to giving morphine, for over thirty years I have used morphine as freely as indications arose and I have never seen an addict. I have never had a patient cry for morphine. There were times I did think the patient wanted morphine and I gave a sterile injection and she was satisfied, showing that the direct indication for morphine was not there.

As far as the bowels are concerned, for years I have given patients forty-eight hours after operation milk of magnesia, one ounce every half hour for three doses and six hours later an enema. I have found no reason to change. This is not original with me; I have seen it used by other men.

I believe this discussion of the after-care of patients is very timely and we should have it occasionally to bring out new ideas.

SOME PHYSICAL ASPECTS OF RADIATION THERAPY

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During the course of my work I am frequently asked about the most satisfactory voltage or filter or distance to be used in therapeutic procedure. It will be my purpose, in this paper, to attempt to answer these and similar questions, at least so far as it is possible from a physical standpoint.

The aim in deep therapy seems to be to get as much radiation to the tumor as possible. In-

Read before Section on Radiology. Illinois State Medical Society, Peoria, May 18, 1937.

creasing the depth dose delivered to the tumor can be accomplished by adjusting certain of the factors in technique which are under our control. Thus an increase in voltage produces greater penetration. However, for each increase in a factor improving depth dose, there is a corresponding undesirable change of some form or other. The increase in voltage is limited by enormously increasing monetary costs. An indefinite increase in filter is halted by an uneconomical increase in treatment time. It will be the purpose of this paper to show the logical limits to which variations in these factors may be carried.

Percentage depth dose is increased by decreasing the wave length of the radiation, by increasing the distance of the tube from the patient and by increasing the area being radiated. Wave length, in turn, may be decreased by increasing either voltage or filter or both.

We will discuss the relation of wave length to depth dose first. In the early days of deep therapy, all generators were of the simple full wave rectified type, and all x-ray tubes were of one style, made by one manufacturer. Under these conditions, a bare statement of the peak kilovoltage, as measured by a sphere gap, and the filtration, gave a sufficiently correct estimate of the quality of the radiation being used. Today the picture is different. There are full wave and half wave, voltage doubling unrectified, with and without grid bias control, constant potential and other types of generators. There are thin walled and thick walled, oil immersed and air insulated x-ray tubes. The inherent filtration built into the modern shockproof x-ray tube stand varies from a few millimeters of aluminum to as much as six-tenths of a millimeter of copper. The combination of all these unknown variables makes it impossible to specify radiation quality by a mere statement of the voltage and the filter. Radiation quality must be specified by some sort of measurement on the x-ray beam itself. The determination and statement of effective wave length is one such method. The effective wave length of an x-ray beam is the wave length of that monochromatic beam which would have the same degree of penetrability as the beam in use. The actual beam in use is always heterogeneous—that is, is composed of various wave lengths. Despite this fact, the

radiation will penetrate a given body to a certain degree. It is possible to conceive of, although not actually to produce, a beam of entirely monochromatic radiation—that is, a beam composed of x-rays of only one wave length. Let us adjust a hypothetical x-ray generator so that it will produce a monochromatic beam which will penetrate a given body to the same degree as the beam we are actually using for treatment. The wave length of this imaginary monochromatic beam is said to be the effective wave length of the beam we are using. The harder or more penetrating the radiation, the smaller will be the numerical value of this effective wave length,

Table 1 shows some effective wave length values:

Peak Kilovolts	Filter	Effective Wave Length
90	0	0.80
100	1mm.Al.	0.40
120	3mm.Al.	0.28
140	$\frac{1}{4}$ Cu + 1Al.	0.20
200	$\frac{1}{4}$ Cu + 1Al.	0.150
200	1Cu + 1Al.	0.140
200	Thoraeus	0.130
200	5Cu + 1Al.	0.90
Radium	Platinum	0.010

A second method of specifying radiation quality is the half value layer method. The half value layer is the thickness in millimeters of a filter necessary to decrease the intensity of the beam being used to one-half. It is obvious that it would take less copper to halve the radiation intensity of a beam of soft radiation, generated at 90 kilovolts and unfiltered, than it would of a beam of hard radiation, generated at two hundred thousand volts and filtered through two millimeters of copper. For x-radiation generated at less than 140 peak kilovolts, and filtered by less than $\frac{1}{2}$ mm copper, aluminum is usually used as the auxiliary filter material, and the half value layer is expressed in millimeters of aluminum. For radiation up to about 400 peak kilovolts copper is used, and for radiation generated at still higher voltages, the half value layer is expressed in millimeters of tin or lead. The choice of various materials is principally a matter of convenience. If aluminum only were used for the entire range, it would be necessary to use too great thicknesses for the higher voltages, both from the standpoint of difficulty in handling, and from the scattering effect. If lead were used throughout, the thicknesses for the less penetrating radiation would be so small

that accuracy would be sacrificed. Table 2 shows some approximate half value layers:

Peak Kilovolts	Filter	Half Value Layer
90	0	0.50mm.Al.
100	1mm.Al.	1.5mm.Al.
120	3mm.Al.	4.0mm.Al.
140	$\frac{1}{4}$ Cu+1Al.	9.0mm.Al.
200	$\frac{1}{2}$ Cu+1Al.	0.m.Cu or 13mm.Al.
200	1Cu+1Al.	1.0mm.Cu
200	Thoraeus	1.4mm.Cu
200	5Cu+1Al.	2.65mm.Cu
400	6Cu+1Al.	5.0mm.Cu

The above two methods of expressing quality give numerical values which are very gratifying to our human desire to express quantities by numerical indices. However, these figures mean very little until we learn to evaluate them in terms of some clinical entity. If you did not know that approximately 700 roentgens constitute an erythema dose, it would not mean much to you to know that someone administered 200 "r" to an area. Similarly with half value layer and effective wave length. We must correlate these figures with something which has a clinical significance before we can use them. Depth dose measurements, in a phantom of water or rice give us a clinical foundation. Thus if I say to you that the effective wave length of x-rays generated at a certain machine setting is 0.15 Angstrom units, it does not mean nearly as much to you as if I say that at 10 centimeters depth, the depth dose is 40 per cent. of the surface dose. One of the serious drawbacks to either half value layer or effective wave length is that their numerical values promise much better depth dose than is actually realized. Thus changing from $\frac{1}{2}$ mm copper to 5 mm copper at 200 peak kilovolts increases the half value layer from 0.9 mm copper to 2.65 mm copper. On the face of it this appears like a startling increase in quality. Yet in terms of increased depth dose it amounts to not more than three or four per cent. The reason for this disparity is that no matter how hard the original radiation, the average wave length is degraded or lengthened as it is scattered in tissue. Thus we must be cautious about the use of quality measurements made on a beam in open air, and remember that a beam is utterly transformed as it passes through tissue.

After this rather extended digression about quality, let us see how it is affected by the factors of type of generator, filter and voltage.

As stated above, there are many types of generators on the market at the present time. My

experience would indicate that from a standpoint of radiation quality delivered, they may be divided into three groups. The best radiation quality would be obtained from the constant potential type. The next best from the type employing a negative grid bias on the x-ray tube. The last group would include the full and half wave and Villard (voltage doubling) circuits. There is little to choose from among the three in this group at least from a standpoint of radiation quality.

Increase in voltage produces better depth dose, but only slightly. Table 3 shows this increase:

Voltage 200 PKV	% Depth Dose
250	47.8
300	48.7
350	49.5
380	49.9
	50.1

$\frac{1}{2}$ Cu+1Al—50 CM Distance
20 x 20 CM Field

I do not have accurate personally obtained data available for voltages higher than 380 peak kilovolts, but I do not think that the value would be more than 55% at 600 peak kilovolts with a filter of as much as 7 millimeters of copper. Since the original cost and upkeep rise enormously with increases of voltage over 200 peak, and since the increase in depth dose is small, it would appear that from a physical depth dose standpoint only, the super high voltages would be uneconomical. Please bear in mind that I have qualified the above statement to a depth dose basis only. Whether or not there is a different biological reaction to the higher voltage is an altogether separate question, and is one which I am of course not prepared to discuss.

For voltages about 200 peak kilovolts, copper filters backed by aluminum are most commonly used in this country. There is a tendency at the present time to use composite filters, the principal filtering material of which is tin. It was shown by Robert Thoraeus at the Radium Hemmet in Stockholm several years ago that a filter composed of a layer of 0.44 mm Tin plus a layer of 0.25 mm Copper plus a layer of 1.0 mm Aluminum would transmit the same intensity (roentgens per minute) as 2 millimeters of copper. However, the quality (effective wave length) of this transmitted radiation was the same as that which would have been transmitted by 3 millimeters of copper. In other words, this filter is more efficient than copper. This increase in efficiency is only significant at voltages of 200

peak kilovolts or higher. The efficiency of a filter is a function of the voltage at which the x-rays it is filtering are generated. Thus at low voltages, aluminum is more efficient than copper, and at high voltages copper is more efficient than aluminum. At still higher voltages, tin is more efficient than copper, and at extremely high voltages, lead is better than tin. There have been several modifications of the original Thoraeus filter; some containing less, and some more tin. One of the more recently suggested composite filters is that described by Merritt in a recent issue of the *American Journal of Roentgenology*. He uses 1.2 mm Tin + 0.25 mm Copper + 1.0 mm Aluminum. This filter transmits the same quality as does five millimeters of copper but a considerably greater number of roentgens per minute than 5 millimeters of copper.

As the filter thickness increases, there is a rather slight increase in depth dose. Table 4 shows some typical values:

Filter Material	Thickness	% Depth Dose	"r" Per Minute
Copper	½ mm.	38	42
Copper	1 mm.	41	27
Copper	2 mm.	42	16
Thoraeus		43	17

200 PKV—15x15cm Port—50 CM Distance.

These figures show that in order to obtain a 5% increase in depth dose, the treatment time must be increased 252%. This is apparently a most uneconomical procedure, and on the basis of physical findings alone would certainly be unjustified. When deep therapy was first introduced into this country in 1921, one millimeter of copper was used almost universally. As more and more depth dose measurements were made, and it was perceived that the depth dose with one millimeter of copper was only very slightly greater than that with ½ millimeter, there was a gradual shift to less filtration, until in the late twenties and early thirties most of the deep therapy work was done with ½ mm copper. However, it began to be noted, principally I believe as a result of Coutard's work, that with heavier filters, the skin tolerance was greater. Greater doses could be given with the same skin effect, or the same dose given with less skin effect as the filter thickness was increased. Doses which in the past would have been undreamed of are today routine with the heavier filters. Five or six erythemas (5000 r) in a period of twenty days are not uncommon—and this to large areas.

I think that for ordinary use two filters might advantageously be employed for deep therapy: ½ mm copper and the Thoraeus filter, equivalent to 2 mm copper; the half millimeter copper to be used in the less involved cases, or where treatment time must be limited. The Thoraeus filter to be used where the greatest amount of radiation is required, where the patient is particularly thick, and where treatment time is not of great importance.

There is one point that I would like to call to your attention briefly in passing. Clinically there is no doubt that as the radiation gets harder (increased filter) the skin's tolerance increases. However, in general as the radiation gets harder another factor changes along with it. This factor is rate or "r" per minute. In other words, as an almost inherent characteristic of increasing the hardness is a concomitant decrease in rate. It may possibly be that the apparent increase in skin tolerance is not due to increased hardness but is due to the slower rate of application of the radiation. Hodges has shown that on the skin of rabbits, equal doses of x-rays given in equal times produce the same effects regardless of whether the radiation is hard or soft. The work of Wood and his co-workers in New York indicates this same result. Coutard, as a principal axiom of his method, insists on a slow rate of application. I do not mean the fractionation of the treatment over a period of many days, but the protraction of each individual treatment over several hours. His results with a low "r" per minute, obtained with low milliamperage and 2 millimeters of copper may be paralleled by Merritt with high milliamperage, 5 millimeters of copper and an approximately corresponding low "r" per minute. The filter may have nothing to do with it. In other words, we have one result with two variables: filter and rate, and it will undoubtedly take considerably more confirmatory evidence on one side or the other before it can assuredly be said which it is: the filter or the rate.

Up to a certain point increasing distance is probably the most efficient way of increasing percentage depth dose. Quimby showed a year or so ago that while it took nine times as long to increase the depth dose 6% by adding filters, it took only four times the time to get the equivalent effect by increasing distance. Table 5 shows

what may be expected from an increase of distance:

Distance	% Depth Dose	"r" Per Minute
50	42	100
60	44	70
70	46	50
80	47	39
100	49	25

Two distances may well be used as standard in deep therapy. Fifty and 70 centimeters. There is some work being done at 80 cm but in the ordinary installation it is hardly justified.

Increasing the size of field treated very materially increases the percentage depth dose due to increased scattering from the surrounding tissues. However, size of field is usually determined by the clinical and anatomical features of the case rather than by the desire to get the greatest possible depth dose. As a rule, all other factors being the same, the largest possible field should be used. Table 6 shows the effect of field size on percentage depth dose:

Field Size	% Depth Dose
5x5 cm	28
10x10	37
15x15	42
20x20	43

A rather general standard technique is 200 peak kilovolts, $\frac{1}{2}$ mm. Copper, 50 cm distance and a 15x15 cm field. With this technique, we can assume a 40% depth dose at 10 centimeters depth. An increase of filter from $\frac{1}{2}$ mm Copper to the Thoraeus filter; from 50 to 80 centimeter distance; from a 15x15 field to 20x20, and from a pulsating generator to a constant potential will increase the depth dose from 40% to 52%. At the same time, it will decrease the number of "r" per minute from 13 to 4.5. Thus you can see, that although changing any one factor produces relatively small changes in depth dose, the summation of all possible changes gives an increase of significant proportions. In the one case, a tumor being radiated from four fields, would receive a total of 1600 "r" for every 1000 "r" given each skin area. In the other case it would receive 2100 "r" for the same skin dose.

Somewhat aside from the main thesis of this paper, but of such considerable interest that I feel that it should be brought up, is the problem of measuring dosage with or without backscatter. Which method should be employed. If I place the ionization chamber of my measuring instrument 50 cm from the x-ray tube in open air, the instrument will measure a certain num-

ber of "r" per minute, say, 10. Now, if I keep all conditions the same except place under the ionization chamber a block of paraffin, the registration of the meter will be about 15 instead of 10. This increase in reading is due to radiation being scattered back from the paraffin block adding itself to the effect of the direct radiation on the ionization chamber. It is much the same effect as if you held your hand out in a driving rain. It would get wet on the top side only. If, however, you held it an inch or so above the sidewalk, the under side of the hand would get wet from the rain which hit the sidewalk and splashed back. The patient under the x-ray tube makes a very good backscattering agent. You may well say that if I measure the dosage with the ionization chamber in free air it will not be the same dosage as the skin of the patient is receiving. That is perfectly true. For 200 kilovolt therapy and with a large field, this difference amounts to about 45%. Why then, do most American physicists prefer to measure in air when the measurements are apparently 45% too low? The answer is that air measurements can be made with considerably greater accuracy. Then a definite known correction can be applied to reduce the values to backscatter values, if desired. As far as dosage goes, the answer will be the same, no matter which way the measurements are made. Suppose that I measure in air and obtain 10 "r" per minute. I will tell you that the number of "r" for an erythema, if measured in air, and then applied to a large field, is 800. Therefore, the erythema time is 80 minutes. If I measured with backscattering, I would measure not 10 but 14 "r" per minute. I would then tell you that, as so measured, it would take 1100 "r" for an erythema, and the treatment time would of course still be 80 minutes. From a practical standpoint, the air measurements are easier to make and are less dependent on variable surrounding conditions. However, the important point is that we must all talk the same language. We must come to a common agreement and then adhere to its usage—either to measure in air or with backscatter. Because there has been no definite authoritative ruling on the question, it is still not possible to duplicate dosage given in about half the journal articles. An author states that he gave 200 "r" per day, and says no word as to how the measurements were made. If you are giving 200 "r" per day measured in

air, you are not giving the same amount at all as the author of an article if he meant 200 "r" per day counting backscatter. That would be only 140 as you measure. It is easy to see that serious over or under dosage might result from a misunderstanding on this point. Since the majority of physicists and radiologists in this country are measuring in air I would like to ask that in papers which you present, or in dosage communications which you send to other radiologists, that you give the dosage in air and so state.

DISCUSSION

Roy Kegerreis, M. D., Oak Park, Illinois: The considerations which Dr. Landauer has discussed are among the most complicated and involved of any with which we have to deal. He has done very well in helping to clarify them.

The discussion applies to you and me in two ways:

1. What apparatus to purchase, and
2. How to operate existing apparatus.

The specification of the physical quality of radiation is complicated and is done completely only when the spectrum is presented. Other short cuts, as the speaker has so well emphasized, always leave out a part of the complete specification, so great care must be used always to realize fully just what limitations are and are not included when quality is designated.

The excessive thickness of an aluminum filter which is required for high voltage x-rays and the mechanical weakness of an appropriately thin film of lead for low voltage x-rays are not the only reasons for the limitation of the range over which these two and the other filter substances are used. The elements aluminum, copper, tin and lead, it might not be amiss to point out, have atomic weights roughly twice each other in an ascending scale. The reason for their employment as filters for the x-ray spectra with which they are used is that the wave lengths at which their characteristic x-ray absorption occurs is conveniently spaced. Because of this each filter material most efficiently absorbs the undesirable portion of the spectrum.

Considerably less than one millimeter thickness of aluminum is sufficient to absorb the secondary x-rays that issue from a superposed copper filter for the ordinary purposes of x-ray therapy. Usage began with the one millimeter aluminum filter and usage in the practice of medicine is prone to change but slowly.

The words Dr. Landauer used "transformed as it passes through the tissues" were first thoroughly demonstrated and explained by our American Nobel laureate, Dr. Compton. Multiple scattering with a consistently increased wave length results when the x-rays pass through the tissues. However, be assured that a statement of so and so many r-units is a specification of the thing which is absorbed.

The number of r-units in air will probably stand as the accepted quantity to be measured. Most people infer it when specifying x-radiation dosage on the sur-

face. The area irradiated and the conditions involved in connection with back scatter should always be completely specified if measurements which include backscatter are reported.

HETEROTOPIC INDEPENDENT ADENOMYOMATOUS TUMORS OF THE FEMALE PELVIS

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and

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CHICAGO

Independent tumors of the female pelvis and lower abdominal cavity are comparatively rare. The architectural formation grossly as well as histologically and the small account of symptoms exhibited by the patients make these growths pathological curiosities. We report four cases of almost identical type with the theoretical considerations concerning the structure and growth of these peculiar tumors.

The following reference table shows noteworthy observations of the four cases on bloc.

Clinical Picture. Uniformly the symptoms described by the patients seemed to be rather vague. Pressure symptoms and "gas pains", eventually frequency in urination as well as low backache were given as the main complaints. Irregular menstruation or metrorrhagia were not present. Other typical symptoms could not be described by the patients.

The pre-operative diagnosis in every one of these cases was inexact. In three cases ovarian cyst or tumor was anticipated, and in one case a fibroid uterus. In surveying the literature practically every author reports the astonishing fact that a correct diagnosis could not be stated before operation.

Gross Pathology. The tumors found in these cases were comparatively voluminous, varying from man's fist to man's head size. The consistency was generally hard, the color (in situ) from white-gray to pinkish-gray. The surfaces were smooth, covered with serosa, save the very small fibrous attachments to either the pelvic floor or sigmoid, respectively. Three of the tumors appeared as absolutely round, globe-shaped, and one was of compound structure with several globe spheres. The cut section surfaces were not uniform in structure. Parts of the growths showed sieve-like perforations and tube-like

Name	Year	Age	History	Symptoms	Clinical Diagnosis	Gross Findings	Microscopic Examination	Weight of Tumor
E. F.	1920	36		Abnormal intra-abdominal pressure	Left ovarian cyst	Man's fist sized, hard, pinkish-gray tumor with thin elongated pedicle, freely movable about entire pelvic region; pedicle loosely fastened to left ovary; mass poor in blood vessels; cut section shows lobulated somewhat protruding areas.	Fibromyoma	242 gm.
A. F.	1934	34	Repeated gastro-intestinal treatments	Pressure on both sides of lower abdomen	Cyst of left ovary and tube	Almost man's head sized tumor of reddish-gray appearance; lobulation into four large equal parts; cut section shows hard, striated tissue with softened red and cystic areas.	Adenomyoma	1350 gm.
J. R.	1934	34	Repeated gastro-intestinal attacks; appendix removed in 1932	Numbness in back and left leg, lower abdominal discomfort	Fibroid uterus	Man's fist sized, hard, grayish tumor connected to serosa of anterior wall of abdomen by thin adhesions, adhesions to omentum, small intestines; cut sections show grooves and fibrous cords, softened red sanguinolent cystic areas.	Cystic adenomyoma	1800 gm.
L. S.	1934	50	Repeated gastro-intestinal attacks	Lower abdominal pressure "gas pain"	Torsion of right ovarian cyst	Man's head sized tumor of reddish gray color with intact serosa except for thin attachment to ascending colon; cut section light yellow striation, small lobulations, hemorrhagic, cystic and friable cavities.	Hemorrhagic, somewhat necrotic adenomyoma	1800 gm.

cavities; others were almost dry with the typical reddish-gray appearance of the myoma, and again other regions were soft, myxomatously degenerated and, contrary to latter areas, others almost stone-like hard.

Nearly all stages of metamorphosis were found grossly as well as microscopically such as inflammation, gangrene, mummification, cystic degeneration, fatty or amyloid degeneration and calcification.

Histology. The basic substance was found to be interwoven fibrous and muscular fibrils with long rod-shaped nuclei. Numerous mast cells were scattered between these fibers. In fresh unstained sections it was possible to isolate the contractile and elastic cells by treatment with 33% potassium hydroxide. Small blood vessels

were found in moderate amount, mostly with a collapsed lumen. The interfascicular connective tissue was arranged around irregular nodules of fibroid substance. (Fig. 1.) These structures, characteristic of fibromyoma, were intermingled with these further elements: 1. Larger and smaller slits and caverns lined by cuboidal or cylindrical epithelium; these spaces were irregular and drawn out in the direction of one axis, the curvatures varied from convex to concave: (Fig. 2.) 2. cytogenous substances in places arranged in irregular nests or islets; (Fig. 3.) 3. glandular ductules and acini of organoid structure; 4. a fairly strong pigmented zone with pigmented cells; 5. leukocytes with fragmented nuclei. 6. tender cells of epitheloid type.

Simultaneously the specimens showed necrotic

parts, accumulated collections of polymorphonuclear leukocytes, hyperchromasy, few atypical mitoses and chromidiosis.

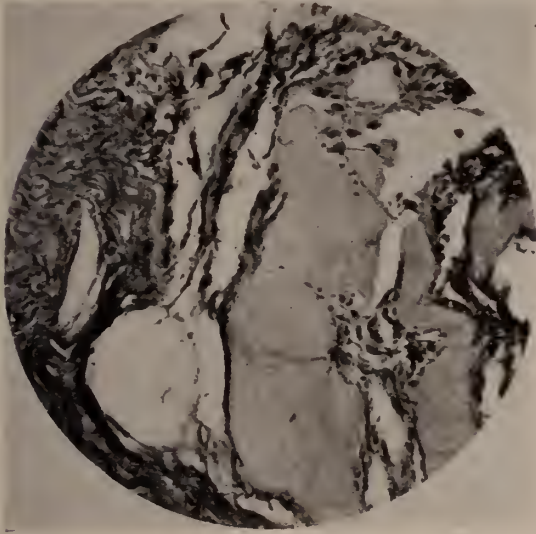


Fig. 1. Smooth muscle fibers of various types with interfascicular connective tissue, colliquation and slight edema of fibers.

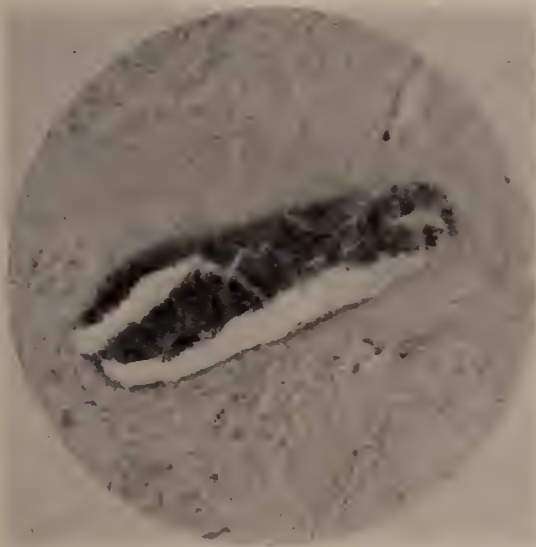


Fig. 2. Cavern lined with cylindrical epithelium, elongated in one axis, surrounded by smooth muscular tissue.

According to the above findings the diagnosis given in the four cases was heterotopic adenomyomatosis.

DISCUSSION

Concerning the histogenesis of this type of growth von Recklinghausen wrote the first thesis on the subject. He named the tumor "adenomyoma" and grouped it histogenetically as rests of

the Wolffian or Gartner's ducts. Numerous publications as to the correlation of these tumors to the rudimentary structures of the primordial kidney, epo-ophoron and paro-ophoron are testimonials for the vivid interest the histogenetic question of these tumors aroused among the authors. The most thorough examination and description we find in L. Pick's articles; he tried

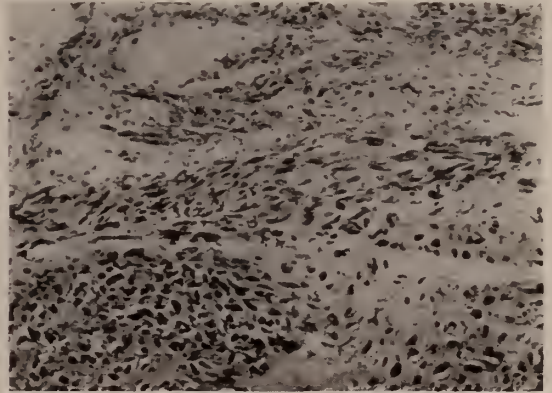


Fig. 3. Nests of cytogenous cells, chromidiosis of nuclei, cells of epitheloid type and leucocytes with fragmented nuclei; pigmentation in places.

to find the embryologic origin and rudimentary connection of the growth. The Wolffian body was given as the probable rudimentary element of the heterotopic tumors. Sitzenfrie and Pohorecky corroborated these findings, and Chevassu even described findings of a glomerulus within the independent tumor.

Yet the fact that the growth was comparatively rarely found in places or in connection with the known glandular rudiments of the primordial nephridium gave cause to doubt the congenital origin of these tumors. R. Meyer and Lubarsch brought another viewpoint into the controversy as to the classification of the heterotopic adenomyoma. According to Meyer's opinion (the one that has been predominant ever since he published his fundamental thesis on this subject), the growth is not a true blastoma. He believes the entire arrangement of the tumor to be a heterotopic epithelial proliferation due to inflammatory changes, after termination of which the etiology might be somewhat indefinite. In many cases even signs of inflammatory processes may not be found. However, the independent location of the growth, mostly in either the parametrium of the sigmoid-rectal region or ascending or descending colon, gives enough reason to believe that, by the many inflammatory processes

within or next to the larger intestinal tract and the gonads, aberrant, epithelial areas might be irritated to pathological growth. The cause of the inflammatory irritation may be unknown, yet attention may be drawn to the many serosa aberrations which are found in the abdominal cavity and there may be potential factors in formation of growths: the cellular activity influenced by the incubator temperature of the abdomen. It is reasonably presumable that in our case histories inflammatory processes in the pelvis or lower intestinal regions played a major part in the consolidation of these tumors, though the patients did not give any history pertaining to inflammation save one with the precedence of a chronic recurrent appendicitis. She had been operated on two years previously and a recurrent serofibrinous appendicitis was found. At that time the tumor was seen on top of the uterus but could not be removed on account of large appendiceal drainage. So the deduction of Meyer may be correct, that inflammatory extrinsic factors may be held responsible for the formation and later complete schisis of the probably preformed areas. Recurrence or possible metaplastic changes of these tumors into malignancies may happen, though no such statements were made in the literature. The somewhat irregular histological structure, the appearance of areas with young indefinite cells, hyperchromasis and mitoses do not allow any conclusions as to the potential sarcomatous or carcinomatous developments. However, since there are even benign metastatizing tumors found, the occurrence of metastases alone does not justify a diagnosis of malignancy.

In the described four cases the patients were fully restored after surgical removal of the growths. A few authors have recommended castration of the patients. We believe such treatment to be too radical and in our cases unwarranted.

The metabolism of these tumors is rather interesting. As mentioned before, the growths are probably favored by the higher temperature of the abdomen. The tumors thus may grow under nearly anaerobic conditions practically without any supply of oxygen from neighboring organs except for osmosis. The ordinary tumor connected to any of the vital organs absorbs a material part of oxygen and glucose from the serum as can be proven by exact measurements. In our cases the blood sugar ratio was measured

in only two instances and found to be within the normal limits. Apparently without any support from the body tissues there is a regular metabolism in these heterotopic tumors, and living cells, blood vessels and secretions are found in them despite their independent existence.

Since the clinical diagnosis in none of these cases was correct before operation, studies of fermentation and reaction toward blood plasma and serum were not undertaken.

Summary. Four cases of heterotopic free adenomyomatous tumors of the abdominal cavity were described and discussed.

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USE OF DINITROPHENOL FOR OBESITY RESULTING IN ABSOLUTE BLIND- NESS AND DESTRUCTION OF BOTH GLOBES

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PEORIA, ILL.

The untoward effects on the eye following the use of dinitrophenol in the treatment of obesity usually cause the production of cataracts. In my case, together with the formation of cataract and its consequent swelling of the lenses, glaucoma supervened with panophthalmitis following, atrophy, bilateral hypotony and phthisis bulbi being the tragic result. In this condition the patient was brought to me still suffering pain in the shrunken globes, with an erythema of the skin of both upper and lower lids, considerable conjunctival discharge and fissures beyond the external canthi. The pain together with an extreme nervous state was controlled by sedatives and local treatment until she could sleep comfortably and had regained her composure. Because of its unusual features—destruction of both globes—this case is presented.

The patient, an obese woman, 46 years of age, was first seen by me February 22, 1937. Her history was as follows: In March, 1934, she was taken to a physician for a general examination because of fatigue and overweight, and he prescribed dinitrophenol for reducing her weight, which was 197½ pounds. Her height was 5 ft. 2 in. Her past and family history was nega-

tive and her complaints at this time were headaches, nervousness, a state of mental depression, debility due to her overweight and attacks of acute tonsillitis. There was no history of cataract in her family. Blood examination showed a secondary anemia and x-ray pictures showed six teeth with apical pathology. After taking the drug two weeks she caught a "head cold" and also noticed at this time that she had a profuse perspiration, becoming, as she expressed it, "dripping wet," and she also had a boil in the nose. Another physician was called and pronounced her condition "pleurisy," but she did not inform him of having taken dinitrophenol. She noticed at this time, however, a change in her vision—that print went "all together" and the letters were of "a red and green" color. She took no dinitrophenol for six weeks, at which time she underwent a tonsil operation, and later was refracted and given glasses by a local oculist. After this she again resumed the daily use of the drug, suffered severe headaches and at this time also noted that she had lost considerable weight, having reduced 20 pounds by May 24, 1934. A physician told her these headaches were caused from the menopause through which she was passing. Her vision was now markedly affected, she not being able to distinguish fine print and she also at this time had some boils on the leg. In January, 1935, she noticed changes in the distant vision, everything being "like in a fog," as she expressed it, and severe headaches, although she had continued taking the drug. At this time together with the changes in vision, she was in profuse perspiration again, weak, prostrated and faint on exertion, and the medicine was discontinued, after seeing the physician who had prescribed it. This period of time when she was taking the drug covered 11½ months. She now weighed 165 pounds, having lost 32½ pounds. She was hospitalized for 2 weeks having marked loss of vision, not being able to see newspaper print and distant vision being very dim and continually growing worse; the intense headaches continued and she had pain in the eyes and back of neck together with extreme nervousness. She was informed now by her oculist that she had cataract and he, after questioning her, ascribed it to the medicine that she had been taking for reducing her weight. She was given cabinet baths and medication, by her oculist. In May, 1935, she visited an optician who began treatments with "lights" which she continued taking until I saw her. From the time of first going to this optician the vision became progressively worse, the pain increasingly more severe both day and night and light perception was abolished shortly afterwards, that being the condition at the present time.

Although the effect of the nitrophenols in raising the metabolic rate in animals has been known for a long time Perkins²¹ investigations on munition workers in the world war brought out its many poisonous and sometimes fatal reactions. In 1933, Cutting, Mehrtens and Tainter² introduced dinitrophenol as a treatment in obesity. Because of the conservative dosage

and stringent observation and that they encountered no susceptible individuals they enumerate only mild and transient reactions. These reactions include headache, sore throat, mild chest pains and increased respiration, backache, excessive sweating and feeling of warmth, night sweats, lassitude, nervousness, lowering of the blood pressure, vertigo, pharyngitis, otitis media,³ abdominal pain, derangement of taste, toxic hepatitis with jaundice, maculo-papular erythema, urticaria, edema, pupura, and extreme pruritis. In the more advanced toxic cases, numbness of feet and hands, peripheral neuritis,⁴ temporary mental changes, symptoms of tetany and possible myocardial dysfunction.

For the past two years after the ingestion of dinitrophenol there have been reports of the following phenomena other than the production of cataracts, by many observers—psychic disturbances, vasomotor and circulatory changes, dermatitic reactions, otologic complications, allergy,⁴ cases of acute complete granulopenia with some recoveries and several deaths.⁵ Seven deaths have been reported from ingestion of dinitrophenol. One death is reported from dinitrocresol⁶ in Great Britain and one from nitrophenol taken for reducing by obese subjects. Leutsker⁷ reports death from circulatory collapse in one case attributed to dinitrophenol. A moderate dosage is required to produce a neutropenia but Hoffman⁸ and associates report a case developing after a total amount of 86 grains over a period of 14 days. In five cases the average dosage of dinitrophenol was 184 grains over a period of 58 days.

One of the cases of agranulocytic angina recovered after taking 7,600 mg. over a period of two weeks. Another of these cases taking 21,800 mg. in the form of "Nitraphen"⁹ over a period of four months recovered after withdrawal of the drug and blood transfusions. In a third case 5.8 Gm. had been taken in a period of 20 days but improved after stopping the drug. A physician taking a quantity approximately 17 times the therapeutic dose died in eleven hours. Masserman and Goldsmith¹⁰ report one death after use of dinitrophenol but with no hematologic or bone marrow changes. Goldman and Habers¹¹ case of acute complete granulopenia with death was in a girl 13 years of age weighing 265 pounds who had taken 81 grains over a 46 day period with reduction in weight of 25 pounds.

In poisons taken medicinally two contributory circumstances of their ill effects are idiosyncrasy and cumulative effect of them taken over prolonged periods. Evidently dinitrophenol has a selective action on the crystalline lens by causing changes in the capsular permeability from chemical changes in the intraocular fluid. No positive tests have been shown to determine the hypersensitivity of individuals to the action of dinitrophenol.

Imerman and Imerman¹² report two cases of dinitrophenol poisoning with unusual features—*anemia, thrombocytopenia purpura and lung abscess*. They summarize 8 cases of *granulopenia* from ingestion of dinitrophenol. Prodromal symptoms occur 10 days to 4 months after the drug is started and consist of fever, sore throat and headaches. After these prodromal symptoms 1-8 days occur fever, tachycardia, increased respiration, hyperemia, ulceration, pain and swelling of gums, pharynx and soft palate. They conclude, in view of the rapidly increasing number of untoward effects of this drug such as peripheral neuritis, cataracts, anemia, thrombocytopenia, and purpura as well as the report of the Council on Pharmacy and Chemistry¹³ for not accepting this drug in New and Non-official Remedies (July 1935) that physicians should make every effort to discourage its use. "The Council warned the profession when it was first brought out, against the use of the drug on an extensive scale until adequate clinical evidence was available to show its harmlessness. Again in 1935 it issued reports of warning and refused to include the drug in New and Non-Official Remedies. This conservative stand proved valuable when experience with the drug showed it to be potent for irreparable harm in certain instances."

Dinitrophenol produces, according to David and Frances Cogan,¹⁴ "the development of cataract unlike other toxic reactions and arise from therapeutic dosage."* Neither they nor Whalman,¹⁵ who has analyzed 40 cases found in the literature, can determine that the eye changes are dependent upon amount or length of time the drug is taken nor how soon the changes take place after ingestion of the drug but are agreed that once the pathological processes in the lens begin they are rapid in their development. One pa-

tient's vision in one week fell from observable dimness to light perception. The toxic effect of dinitrophenol, they show, may occur after the drug has been discontinued altogether. Four patients in their series developed cataract a year after the discontinuance of the drug while two more developed them three months after discontinuation. Cogan calls attention to the polychromatic opacities in the anterior part of the lens and this may account for the visual color changes as complained of by my patient. In Whalman's series of 40 cases, acute glaucoma developed in two cases, one in six weeks and the other in 30 days. Kniskern reports two cases and Lewin¹⁶ reports one case of increased tension in patients after taking dinitrophenol.*

Shutes²⁶ reported 3 cases of dinitrophenol cataracts, one of these a woman who having failing vision in October, 1934, together with one of Kniskern's patients were the first in whom changes in vision occurred from dinitrophenol.

Hitch and Schwartz¹⁷ up to June, 1936, have found 14 reports of bilateral cataracts and also noted in their case that cataracts developed from an extremely small amount of the drug and the lenticular changes remained as minimal opacities throughout observation. They believe the slight visual impairment would have escaped the patient's notice had she not been under hospital observation and suggest the possibility that other persons with similar degrees of impairment have not sought medical aid.

Rundles¹⁸ records a case of cataract following the use of dinitrophenol for reduction of weight. Hill¹⁹ reports a 36-year-old woman in whom cataract formed one year after dinitrophenol was discontinued and from the first onset of symptoms blindness was complete in 8 weeks.

Brobeck,²⁰ Shields,²¹ Lasar,²² Gifford,²³ (reported by Lasar), Kniskern,²⁴ Allen and Benson,²⁵ Boardman,²⁷ Glowacki,²⁸ Lewin,¹⁶ report single cases of cataract after dinitrophenol ingestion. Hessing²⁹ reports some cases and Lukens,³⁰ three cases from the same cause. Lasar theorizes that the tremendous dehydration of tissue may hasten maturity of lens opacities already present. Frost,³³ reports partial optic atrophy in a patient from skin absorption of dinitrophenol.

In one of Veasey's³⁴ cases vision began to fail

*Schulte⁴⁶ found no lenticular opacities in dogs when fed dinitrophenol nor any demonstrable liver impairment.

*Tension rose in 4 instances in Horner's cases and required immediate surgical intervention.

10 months after the last dose had been administered and within 6 weeks from the first symptom of failure the vision was practically abolished. In another of his cases there was a period of 9 months before the vision began to blur and within 6 weeks there was a mature cataract. In Cogan's¹⁴ cases the average daily dose of all the patients was .45 gram. Three of these patients took only a daily dose of .3 gram. The average period dinitrophenol was taken in 16 cases was about 8 months. Of 20 cases of Cogan's only 3 patients had any other toxic manifestations—one having had slight gastro-intestinal symptoms, another complained of numbness of her feet and hands, and a third had peripheral neuritis.

Spaeth³⁵ in his case believes dinitrophenol produced a parathyroid deficiency as the latter condition is a known cause in the production of cataract. His patient took 1,300 grains. Mental changes (apathy and instability) were noted. Clinical and laboratory signs of tetany appeared after the mental symptoms. In this connection Russo³⁶ reports that twelve days following a thyroid operation a woman had severe recurring convulsions at intervals. Six months later cataract developed and the author believes tetany and cataract are expressions of the same pathogenic factor—caused by disturbance of electrolytic equilibrium especially of the calcium. The lens opacity is attributed to changes in the capsular permeability arising from chemical disintegration of the intraocular fluid.

Kugelberg³⁷ examined the lenses of 142 patients between 4 and 18 years of age who had been treated for tetany and a control of 101 normal children between 7 and 14 years of age. Of the 142 with a history of tetany 30% had zonular lenticular opacities. None of the controls showed cataract. These findings confirm the view that tetany caused by infantile parathyroid deficiency is the etiological factor in zonular cataract. Of the pathologic series 57% had enamel hypoplasia of the teeth and 35% of these had cataracts.

Horner⁴⁶ of San Francisco does not believe that there are over a hundred cases, in which cataract has followed the administration of dinitrophenol. He, however, states that he has seen four new cases in February, 1936, making a total of eleven cases observed by him, and it is probable that more of the drug was prescribed or used in California than in any other locality in

the United States. He believes that cataracts occur in from one-tenth to 1% of cases, and he thinks the drug should be withheld pending further study. In August, 1936, Van der Hoeve and Daniels⁴² published a warning abroad against the dangers of dinitrophenol. The authors observed a case of binocular cataract formation resulting from absorption of 40 gm. of dinitrophenol. The drug was given in two periods and at no time had the daily dosage been exceeded. About 6 months later the initial symptoms were noted. Marcove⁴³ reports a case of dinitrophenol cataract in which the changes in the lens were followed from its inception and began in the anterior and posterior subcapsular areas then with rapid involvement of older cortical fibers and cortex.

Rodin⁴⁴ reviews 32 cases of dinitrophenol cataract. The length of time the drug was taken was from 3 months to 2 years. In 27 patients cataracts appeared within 15 months. He believes from analysis of these cases that the length of time the drug is taken is not a factor in the production of the lens opacities.

Since in obesity, Short and Johnson⁴⁵ have found there is an increased total metabolism, the giving of metabolic stimulants in form of either thyroid preparations or of drugs such as dinitrophenol is entirely illogical. Medical treatment for cataract is useless but good results may be obtained by operation according to Horner,⁴⁶ who, in 14 extractions obtained vision of 0.8 or better. These findings of good surgical risk are corroborated by Barkan⁴⁷ and his associates who report results of operation in 24 cases and conclude that the prognosis for useful vision is good.

Inquiries of different retail pharmacists in this city, elicit the information that the druggists still carry for sale dinitrophenol even in the form of one grain and a half tablets.

Dinitrophenol has been sold under the name of "Dilex-Redusols" but against this preparation was issued a fraud order by the Post Office department. Another reducing medicine is sold under the name of "Slim" which contains dinitrophenol and which has been the cause of some of the complications following the use of dinitrophenol. Other preparations, among them, "Nox-Ben-ol", "Slendrets" and "Reducoids" are on the market at the present time and across the cap of the bottle of the latter is a seal which states that there is no "Dinitrophenol" used in

this preparation. An investigation should be made to see if the latter statement is correct in this or other preparations sold at the present time. In the 1936 edition of Beren's Text-Book on the eye, I could find no mention of the poisonous effects of dinitrophenol.

CONCLUSIONS

1. The danger of susceptibility of an individual to dinitrophenol and its selective action upon the crystalline lens of the eye together with its lethal effects on other organs of the body prohibits its use by physicians. There is no known specific chemical antidote for dinitrophenol poisoning and no positive tests have been shown to determine hypersensitivity of an individual to its action.

2. Dinitrophenol is still offered for sale by drug stores. The drug is perhaps still advertised in newspapers and over the radio. Sale of such a dangerous medicament should be prohibited by law. There are now enough reports in the literature of its disastrous effects, of deaths, blindness and other serious pathologic bodily changes in susceptible patients to condemn its use altogether.

3. Any patient who has been subject to the possible disastrous effects on the eyes of dinitrophenol should be carefully watched for the first changes in the lens, the amount of swelling and the possible advent of increased tension and progressive involvement of the various structures of the eye. Glaucoma, positively occurring in this case, has been reported in several cases following use of the drug and unless proper measures are taken medically and surgically where increased tension appears, disaster is inevitable.

4. My patient, had she sought medical aid at the time the lenses became intumescent and continued under close medical supervision would not have had the extreme involvement of the whole contents of the eyes resulting in panophthalmitis, atrophy of the globes and complete loss of vision.

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DIARRHEA—GASTRO-COLIC FISTULA

Report of Seven Cases Based on 7,000 Proctoscopic Examinations

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In a brief resume one hesitates dwelling too much on detail and on "rehashing." My objective in this paper is to emphasize one important essential in dealing with diarrheas and to illustrate this by a clinical case. I want to again stress the importance of determining the cause of a diarrhea before attempting treatment. For obvious reasons the line of least resistance seems to sway the opinion of both the physician and the patient, and commonly the method of approach is symptomatic treatment. When a diarrhea persists a week or two, certainly a careful investigation is indicated and should be urged by the physician.

I made a careful summation of all diarrheas observed in the past eleven years and can truthfully say that about 50% of all diarrheas observed were of four months duration or longer and had not at any time had a careful proctoscopic examination. I will outline the various groups as follows:

A. It is clear that in ulcerative lesions of the colon, persistent diarrhea is not an early symptom, but it is, however, worthy of note that a large percentage of ulcerative lesions of the colon present a history of change of bowel habit, first as to frequency of stools, and secondly as to their consistency. The change in bowel habit I believe is probably the earliest subjective symptom. If the patient presents himself at that period, a careful proctoscopic examination may reveal early pathologic changes, such as marked inflammatory changes or edema of the colon, and thus will enable the physician to treat these cases at an early stage of the disease and will safeguard prolonged disability to the patient.

B. Patients who have diarrhea and do not improve on symptomatic management outlined

for several weeks should have a careful proctoscopic examination, because very often the origin of diarrhea is gastrogenic and a proctoscopic examination is the only means of approach to aid in the differential diagnosis.

C. Another form of diarrhea commonly observed in this series is a type which occurs at certain indefinite intervals. This form of diarrhea does not elicit blood in the stool and the patient does not ordinarily lose weight. In this group, a proctoscopic examination is essential in that it may definitely demonstrate a normal mucosa and normal activity of the colon and rectum per se. All diarrheas of this group may be classed under a group of diarrheas of reflex origin, especially from pathologic sources of the lower abdomen and pelvis in the female.

D. In diarrheas which may have been produced because of postoperative adhesions, causing retention of toxic products, it is necessary to rule out the colon itself, because pathology of the colon mucosa may be superimposed upon the toxic and the mechanical cause.

E. It is most important, of course, to realize the part which the rectum may play in prolonging the diarrhea. A marked proctitis, which is so readily produced by a persistent diarrhea, may continue to be the etiologic factor of diarrhea despite the fact that the colon per se may have been cleared of pathology or not involved at all at the onset.

All I have mentioned is merely to indicate causative factors of diarrhea and to emphasize how they may apply and how essential it is to differentiate a pathological from a normal colon by proctoscopic examination. There is one group of diarrheas which I would like to refer to by an illustrative case:

A man, aged 27, presented himself to a physician with a clinical history of duodenal ulcer. He had been on management, and later in the judgment of the physician the patient was advised to have a gastroenterostomy. He made an uneventful recovery and carried on a useful life for about two years. At this time the patient returned complaining of a sudden onset of diarrhea varying from 6 to 10 stools daily. No blood or pus or mucus was evident in the stool and no pain or cramping was noted at any time.

Symptomatic treatment was applied, but the diarrhea persisted and the patient grew progressively worse, continued to lose weight and became markedly dehydrated. Stools examined for parasites were negative. Gastrointestinal series proved negative. About one and a half years later I was called to see the patient and I suggested a proctoscopic examination.

Proctoscopy revealed a markedly inflamed colon uniformly red, demonstrated no ulcerations and no evidence of any organic disease. In differentiating the colon on an inflammatory or organic basis, I felt fairly certain that the diarrhea was undoubtedly of gastro-genic origin, and proceeded with roentgenology.

Barium Enema revealed the barium sulphate traversing the descending colon proximally, entering the stomach and passing into the small intestine from a second aperture out of the stomach. The diagnosis was made of a *gastrocolic fistula* and exploration performed.

Discussion. Gastrocolic fistulas were first discovered by Murchison in 1857. Since then cases were reported by Pratt (1923), Bec (1897), Port and Reizenstein (1907), Voorlaere (1912), Rankin (1921), Czerny (1903), Bolton and Trotter (1920), and Judd (1921).

I have had the opportunity to diagnose and treat seven gastrocolic fistulas in ten years. The majority of such fistulas are caused by malignant lesions in the greater curvature of the stomach, and secondly, these fistulas are due to gastrojejunal ulcers following gastroenterostomy.

The interesting phase of this entity is that the gastrocolic fistula does not produce any symptoms until the new stoma between the two viscera is complete. A severe bleeding spell occasionally marks the onset of the perforation of the stoma. One of the most characteristic features of the gastrocolic fistula is *diarrhea* lenteric in type and evidenced almost instantly upon food intake. At occasional intervals the false passage becomes closed and the patient is symptom free, but the freedom is only intermittent.

While I do feel that a proctoscopic examination is most helpful in observing the pathology of the mucosa of the colon, it is very essential to complete the diagnosis by the aid of roentgenology. The reason why roentgen examination made by oral administration does not always reveal the suspected case is because the redundant mucosa often covers the fistula from above downward and acts like a ball-valve; more often where the barium meal fails, the barium enema succeeds in revealing the true nature of existing pathology.

As to treatment, one has very little to promise medically; the condition requires surgical measures. The surgical mortality is very high, but does not approach the high rate of mortality if operation is not performed.

307 North Michigan Avenue.

MORTALITY REPORT OF THE DEPARTMENT OF OBSTETRICS AND GYNECOLOGY OF THE UNIVERSITY OF CHICAGO CLINICS AND OF THE CHICAGO LYING-IN HOSPITAL

May 25, 1931 to June 30, 1936

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CHICAGO

A summary of statistical data relating to the procedures performed at a single institution is of greatest value to the personnel of that institution. Such a summary is of general value in furnishing a record of results extending over a period of years. When combined with similar statistics collected elsewhere it may emphasize weak points in the practices of the past and thus serve to establish trends in future medical practice. The following tables present the results of such a study at The University of Chicago clinics and The Chicago Lying-in Hospital and Dispensary. They are presented in part to correct false impressions which may have resulted from inaccurate statements appearing in the lay press during May and June, 1936. The data presented here includes only those cases cared for in the new institution.

Obstetrics. The new physical plant of The Chicago Lying-in Hospital was opened on May 25, 1931, in affiliation with The University of Chicago. From that time until June 30, 1936, a total of 16,769 obstetric patients were treated (see Table 1). In this group there were 41 deaths. This gives a total gross mortality of 0.244% (24.4 per 10,000). There were 13,735 hospital deliveries and 2,461 deliveries in the home. The Home Service division was not established until October, 1932. Of the entire group 55.8% were multiparae (Table 2). Fetal position is also recorded in Table 2.

It will be seen from Table 3 that 11,020 (67%) of the deliveries were natural. There was therefore an operative incidence of 33% (5,337) in the total series. This increases to 37.5% (5,204) among the hospital deliveries. More than one-half of the operative procedures were low forceps deliveries. The number of deaths is divided equally between the natural and operative deliveries.

Table 4 lists a miscellaneous group of operative procedures upon obstetric patients. It in-

cludes all of the additional hospitalized patients and in some instances, notably the breast abscess group, duplicate cases previously reviewed. The three deaths in this series are further summarized in later tables.

In Tables 5 and 6, the cases with a fatal result are reviewed. In total there were 48 deaths among obstetric patients. For seven of these we cannot assume responsibility as they were admitted to the hospital following delivery by other agencies (Table 6). Four died of sepsis, one of pneumonia and two of meningitis (one tuberculous and the other following a pneumonia). Of the remaining 41 patients, seven died undelivered. Two of these died of pelvic infection—one at 18 weeks gestation and the other at term. In both, death occurred before the onset of labor. Two were eclamptics in whom the disease was fulminating. One, who died of cardiac failure, was 10 weeks pregnant. One had been successfully treated for hyperemesis and died at 24 weeks of a pulmonary hemorrhage of unknown etiology. The other was approximately 20 weeks pregnant and died in an unforeseen diabetic coma.

The third group consists of those delivered by the Chicago Lying-in Hospital staff. Death was from a variety of causes. The most frequent was infection which in four cases followed natural delivery, in one case came after a midforceps operation and in the other instance was subsequent to laparotrachelotomy and sterilization of a cardiac patient.

The second largest group consisted of deaths from hemorrhage. One was a natural delivery in the home, one followed craniotomy for a post mature child, and one was in a patient with pre-eclamptic toxemia who delivered naturally and bled because of a retained placental cotyledon. The fourth was an eclamptic who delivered naturally.

Three patients died of hemorrhage associated with uterine rupture. In one instance a Braxton Hicks' version had been done on a five to six months' fetus. There was an associated premature detachment of the placenta. In the second a version and extraction had been performed and in the third, delivery of a dead fetus was accomplished by Dührssen's incisions and craniotomy. One patient died of hemorrhage from omental vessels the day following a laparotrachelotomy in which extensive adhesions had been encountered.

There were five deaths from cardiac disease. Two of these delivered naturally and two were delivered by low forceps application and extraction. The other had a laparotrachelotomy.

Three deaths were due to pneumonia. In one of these the patient had a severe cold before delivery. In the second its origin was due to aspiration. The source of infection in the third case was unknown.

There were three cases of pulmonary embolism or pulmonary collapse. One of these occurred in a spontaneous abortion at 14 weeks in a patient with an acute nephritis. One occurred two and one-half hours after a spontaneous delivery in the home and the third occurred on the eighth day following a low forceps delivery.

The two patients with severe meningitis were delivered by cesarean section and in both instances the operation was performed solely in the interests of the baby. The infection was tuberculous in both cases.

The patient with hyperthyroidism had refused a hospital delivery and died from cardiac failure and pulmonary edema one day following a natural delivery.

The patient with gonorrheal endocarditis died 26 days following natural delivery. She also had a gonorrheal arthritis.

The death attributed to hyperemesis gravidarum had the pregnancy terminated at 12 weeks by vaginal hysterotomy. The eclamptic patient was delivered of a premature dead fetus by craniotomy.

In the patients who died of diphtheria and agranulocytic angina the cause of death is self explanatory. The remaining death occurred from infection in a patient operated on for the removal of an ectopic gestation.

The 34 deaths which followed delivery and termination of pregnancy may also be considered from the standpoint of the associated procedure. (Table 5). In 15 cases death was subsequent to natural delivery. In four instances in this group death was due to infection. One of these patients was delivered of a stillborn infant in the home following one and one-half hours of labor complicated by a partial early separation of the placenta. The other three had natural deliveries with episiotomy in the hospital.

Three patients who delivered naturally died from postpartum hemorrhage. One of these was complicated by a pre-eclamptic toxemia and

retention of a placental cotyledon. One was an eclamptic. The third occurred following delivery in the home.

Two patients in this group had cardiac decompensation and died of cardiac failure subsequent to delivery. Two patients developed pneumonia following natural delivery. In the remaining four cases death was due in one instance each to pulmonary embolism, gonorrheal endocarditis, diphtheria and hyperthyroidism with cardiac failure.

There were five deaths among the low forceps deliveries. Two of these were cardiac patients. One each died of pulmonary embolism, pneumonia and agranulocytic angina.

One patient delivered following mid-forceps application died of puerperal infection. She was admitted to the hospital where delivery was accomplished, after she had been in labor in the home under observation by the Home Service division.

One death occurred following version and extraction in a brow presentation and was due to hemorrhage from a ruptured uterus. One death followed Braxton Hicks' version in which uterine rupture also occurred.

Three patients died subsequent to delivery by craniotomy. One of these died of postpartum hemorrhage. In one case death was due to eclampsia. In the third instance death was due to hemorrhage from a uterine rupture.

Five deaths occurred among the patients delivered by cesarean section. In two cases the classical operation was performed in patients with tuberculous meningitis in successful attempts to save the baby. In one case laparotrachelotomy and tubal ligation was done because of a vesicovaginal fistula. Extensive dissection was necessary during the operation because of adhesions encountered. This patient died of postoperative hemorrhage from omental vessels. One patient died of cardiac failure following laparotrachelotomy because of the heart disease. The other patient was delivered by laparotrachelotomy and was sterilized because of cardiac disease. She died of sepsis 67 days postoperative.

One patient died following vaginal hysterectomy performed to interrupt a 12 weeks' pregnancy complicated by hyperemesis. Death was due to the hyperemesis. One patient with an acute nephritis died following unintentional abortion at 14 weeks of pulmonary embolism.

One patient died from infection following laparotomy for removal of an ectopic gestation.

Tables 7 and 8 present a summary of obstetric results from the standpoint of the fetus. In Table 7 the separation between previable and premature infants is incomplete as we did not standardize our groups until 1932. It is to be noted that there were 16,003 live births in the total series with 354 stillbirths. There were 300 neonatal deaths. This gives a gross fetal mortality of 654 or 3.9%. When the 59 previable infants under 1,000 grams in weight are deducted the gross mortality becomes 3.6%. These groups are further subdivided in the tables.

Gynecology. The division of gynecology began operating in the Billings Hospital at The University of Chicago in October, 1929. This summary of gynecologic operations begins with that date and from May 25, 1931 includes both the operations performed there and in the new Chicago Lying-in Hospital.

During this period 3,202 gynecologic operations were performed with a mortality of 26 or 0.81%. In addition 15 deaths occurred in non-operative patients. Of this later group 12 were due to genital malignancies, two to infection and one to cardiac disease.

Table 9 lists those operations which were considered as of minor risk to the life of the patient. In general they did not involve opening of the peritoneal cavity and were largely perineal and vaginal procedures. Those listed as vulvovaginal procedures include a miscellaneous group, such as removal of condylomata, urethral caruncles and stem pessaries, excision of Bartholin and vaginal cysts and incision of Bartholin, perineal, perianal and urethral abscesses. The colpotomies include both anterior and posterior approaches and were in most cases done for the drainage of pelvic abscesses.

The group listed under trachelorrhaphy, perineorrhaphy and anterior colporrhaphy were often combined procedures. The number recorded is that of the individuals operated upon and most of them had two or more of the procedures listed. There was one death in this series. This patient had a dilatation and curettage, anterior colporrhaphy and perineorrhaphy. She died on the eighth postoperative day of pelvic thrombophlebitis, septicemia, lung abscess and bilateral empyema.

In the 18 patients with fistulae both recto-

vaginal and vesicovaginal fistulae are included. The patient who died was operated on for a vesicovaginal fistula and died 31 days postoperative with a cystitis, pyelitis and nephritis.

The remainder of the table is self-explanatory with perhaps the exception of the group listed as secondary closure of the abdominal wound. The majority of these were closures following superficial separation associated with wound infection. Death occurred in two of the patients in which evisceration developed. These deaths are charged to the original operation which was a complete hysterectomy with adnexal removal in one case and a bilateral adnexal removal in the other.

In Table 10 are grouped the major gynecologic procedures. There were 24 deaths in 1,323 cases in this group which is 1.81%. Death was attributed to cardiac disease in nine cases, to infection in eight cases, to pulmonary embolism in four cases and to pulmonary edema, anuria, and carcinoma in one case each.

In the first group vaginal hysterectomy was done in addition to colpocleisis in nine cases. There were two deaths. One of these was due to cardiac disease and the other to pulmonary embolism.

The second group consisted of 51 vaginal operations primarily for the repair of relaxation in the course of which the peritoneum was opened. In most cases this was done in order to expose the appendages so that sterilization might be done. There were no deaths.

In the third group are listed 150 vaginal hysterectomies with three deaths. Most of these were performed for the cure of prolapsus uteri but a few were performed in the treatment of small fibroids or because of irregular uterine bleeding of non-malignant origin. One of the deaths was due to pulmonary embolism. The other two were due to infection plus intestinal obstruction.

There were 511 patients upon whom incomplete hysterectomy was performed. The most frequent indication for operation was the presence of benign uterine neoplasms. Approximately one-half of the operations were for this reason. Next in frequency was adnexal disease forming approximately one-fourth of the group. In about one-third of the cases the uterus alone was removed, in one-third both adnexae were removed and in the remaining third one tube and ovary were removed. There was one death in each of

these three divisions so that removal of the adnexae did not appear to increase the risk. Death was due to peritonitis in two cases and to pulmonary and cerebral embolism in the other case.

There were 175 complete abdominal hysterectomies. Here again benign uterine neoplasms were the indication for operation in approximately one-half of the cases. Benign ovarian neoplasms and adnexal disease formed nearly one-third of the indications. Irregular and profuse uterine bleeding was the indication in one-half the remainder. Malignant disease of the uterus was the fourth largest group.

Both adnexae were removed in nearly one-half the cases and six of the seven deaths occurred here. In the remaining half the division is nearly equal between those in which the uterus was removed alone and in which one adnexa was removed. The seven deaths were due to infection, cardiac disease and pulmonary embolism in two cases each and to urinary suppression of unknown etiology in one case.

The 42 patients who had combined vaginal and abdominal operations consisted of patients requiring vaginal plastics and less extensive forms of intrapelvic surgery. Most of these were suspensions of the uterus, removal of diseased adnexae or of the appendix. In a few cases hysterectomy was performed. There were no deaths in this group.

Myomectomies were performed in 27 cases without mortality.

In the group listed as operations upon the ligaments, tubes, ovaries and appendix there were 244 cases with four deaths. These patients in most cases had more than one procedure performed. Appendectomy was not the primary operation in these cases, but was performed following the gynecologic procedure when inspection indicated and the patient's condition warranted it. Death was cardiac in origin in three of the fatal cases in all of which ovarian cysts had been removed. In the fourth case it was due to infection following separation of extensive adhesions and removal of both tubes and ovaries.

The group of exploratory laparotomies consisted in nearly all cases of patients in whom a preoperative diagnosis of ovarian malignancy had been made and the abdomen opened to obtain tissue for microscopic examination. When more extensive procedures were done the cases were

transferred to the appropriate group. Four of these patients died. In two instances death was cardiac. In one case with extensive abdominal carcinomatosis death occurred fifteen days post-operatively and is listed as due to the carcinoma. In the other case peritonitis was the cause of death.

The last group is of three cases upon whom radical vulvectomy and inguinal gland resection were performed for carcinoma of the vulva. There was no operative mortality, one patient having died eleven months later of recurrence of the carcinoma.

Particular information on various aspects of this study may be obtained from the following list of special studies which have previously been published.

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TABLE 1. OBSTETRICS

SUMMARY OF PATIENTS

May 25, 1931—June 30, 1936

	Total	Deaths
Deliveries (Natural and Operative).....	16,196	31
Operative Procedures (Not Delivery).....	566	3
Undelivered	7	7
Total	16,769	41
Gross Total Mortality—0.244 per cent.		

TABLE 2. OBSTETRICS

PARITY AND FETAL POSITION

	Hospital	Home Service	Total	Per Cent
Primiparae	6593	507	7100	43.8
Multiparae	7125	1926	9051	55.8
Unrecorded	17	28	45	0.4
Total	13,735	2461	16,196	100.0
Vertex	12,622	2245	14,867	90.9
Breech	592	65	657	4.0
Other	75	6	81	.5
Unrecorded	581	171	752	4.6
Total	13870	2487	16,357	100.0

TABLE 3. OBSTETRICS

METHODS OF DELIVERY OF BABY

May 25, 1931—June 30, 1936

	Hospital	Home Service	Total	Deaths
Natural	8666	2354	11,020	15
Low Forceps	2986	45	3,031	5
Mid Forceps	651	28	679	1
Breech Extraction	519	52	571	0
Version and Extraction.....	118	7	125	2
Cesarean Section	853	0	853	5
Miscellaneous	77	1	78	3
Total	13,870	2487	16,357	31

Note: 71 Cervical Incisions (Dührssen) were performed in combination with the above.

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TABLE 4. OBSTETRICS

OTHER OBSTETRICAL PROCEDURES

May 25, 1931—June 30, 1936

	Total	Deaths
Unintentional Abortion	98	1
Therapeutic Abortion (D. & C.).....	35	..
Incomplete Abortion (D. & C.).....	188	..
Laparo-Hysterotomy with or without Sterilization	60	..
Vaginal Hysterotomy with or without Sterilization	5	1
Hysterectomy for Ruptured Uterus.....	5	..
Laparotomy for Ectopic Gestation.....	21	1
Removal of Moles.....	5	..
Drainage Breast Abscess.....	149	..
Total	566	3

TABLE 5. OBSTETRICS

PROCEDURES ASSOCIATED WITH MORTALITY*

May 25, 1931—June 30, 1936

Natural Delivery	15
Low Forceps Delivery.....	5
Mid Forceps Delivery.....	1
Version and Extraction.....	1
Braxton Hicks' Version.....	1
Cesarean Section	5
Craniotomy	3
Vaginal Hysterotomy	1
Unintentional Abortion	1
Ectopic Pregnancy -Laparotomy	1
Undelivered	7
Total	41

*Excludes cases delivered under other auspices and admitted postpartum.

TABLE 6. OBSTETRICS

CAUSE OF OBSTETRICAL DEATHS

May 25, 1931—June 30, 1936

	Delivery by Chicago Lying-in	Undelivered	Elsewhere	Total
Infection				
Antepartum .....	..	2*	..	2
Postpartum	6	..	4	10
Hemorrhage				
Postpartum	4	..	..	4
Ruptured Uterus	3*	..	..	3
Postoperative	1	..	..	1
Eclampsia	1	2	..	3
Hyperemesis	1*	..	..	1
Cardiac Disease	5	1*	..	6
Pulmonary Embolism	3*	..	..	3
Pneumonia	3	..	1	4
Meningitis	2	..	2	4
Pulmonary Hemorrhage .....	..	1*	..	1
Endocarditis—Gonorrheal ..	1	..	..	1
Diphtheria	1	..	..	1
Diabetes .....	..	1*	..	1
Hyperthyroidism	1	..	..	1
Agranulocytic Angina	1	..	..	1
Infected Ectopic Gestation. 1*	..	..	..	1
Total	34	7	7	48

*One in each of these groups was a pregnancy before viability.

TABLE 7. OBSTETRICS
DEVELOPMENT AND CONDITION OF INFANTS

May 25, 1931—June 30, 1936

Infants Delivered	Hospital	Home Service	Total
Previa (Incomplete)	49	14	63
Premature	763	79	842
Term	12,989	2382	15,371
Unrecorded	69	12	81
Total	13,870	2487	16,357
Multiple Births	134 (1 trip- lets)	26	161
Patients Delivered	13,735	2461	16,196
Live Births	13,553	2450	16,003
Stillbirths	317	37	354
Total	13,870	2487	16,357

TABLE 8. FETAL MORTALITY

May 25, 1931—June 30, 1936

	Hospital	Home Service	Total
Stillborn:			
Previa	19	9	28
Premature (Viable)	140	9	149
Full Term	158	19	177
Total	317—2.2%	37—1.4%	354—2.1%
Neonatal Death:			
Previa	27	4	31
Premature (Viable)	143	5	148
Full Term	109	12	121
Total	279—2.0%	21—0.8%	300—1.8%
Total Deaths	596—4.2%	58—2.2%	654—3.9%
Infants under 1000 Gms.	46	13	59
Corrected Total	550—3.9%	45—1.8%	595—3.6%

TABLE 9. GYNECOLOGY
MINOR GYNECOLOGIC OPERATIONS

October 1, 1929—June 30, 1936

	Number	Deaths
Examination under Anesthesia.....	34	..
Diagnostic D. & C. and/or Biopsy.....	945	..
Radium Insertion	245	..
Vulvo-Vaginal Procedures	103	..
Colpotomy	62	..
Vulvectomy	16	..
Trach., Perinorrhaphy., Ant. Colp.....	420	1
Repair of Fistulae.....	18	1
Secondary Abdominal Closure.....	24	..
Herniorrhaphy	11	..
Removal of Foreign Body.....	1	..
Total	1879	2—0.1%

TABLE 10. GYNECOLOGY
MAJOR GYNECOLOGIC OPERATIONS

October 1, 1929—June 30, 1936

	Number	Deaths	Per Cent
Colpocleisis with or without			
Vaginal Hysterectomy	45	2	4.4
Vaginal Plastic with Opening			
Peritoneum	51	..	..
Vaginal Hysterectomy	150	3	2.0
Incomplete Abdominal Hysterectomy...	511	3	0.58
a. With removal of one adnexa	153		
b. With removal of both adnexae	196		
Complete Abdominal Hysterectomy...	175	7	4.0
a. With removal of one adnexa	43		
b. With removal of both adnexae	85		
Combined Laparotomy and Plastic....	42	..	..
Myomectomy	27	..	..
Operations on Tubes, Ovaries, Liga-			
ments, Appendix	244	4	1.23
Exploratory Laparotomy	75	5	6.66
Bassett Operation	3	..	..
Total	1323	24	1.81

BRAIN PATHOLOGY and MENTAL ALIENATION

B. LEMCHEN, M. D.*

CHICAGO

Under this heading I would like to describe several mental alienations where pathological changes in the brain are either established or may reasonably be assumed to exist.

1. *Complete Amnesia*. Where a person develops a condition of his mind where he is disoriented in all spheres and may perform almost any act. It may last from a few hours to several months. From their actions and talk a good many of them hallucinate. However, when they recover they remember nothing that has transpired, not even the hallucinosis they have experienced during the amnesic state.

This condition is found sometimes in hysteria and epilepsy, more often in brain injuries and alcoholics. They were very common in moon-

shine users. The condition of the brain during the state of amnesia among those who have recovered, of course, is not known; but when autopsy was made on those who acted the same as those who have recovered, we found extreme edema of the brain with congestion of the cerebral vessels. One case that was struck by an automobile was brought to the Chicago State Hospital for emergency treatment. On examination the only visible injury was a discoloration of the buttock. We kept her in our place for some time because we considered her in too serious condition to be removed and her brothers also promised to have her taken to a private hospital. However, the brothers afterwards had her removed to the County Hospital where she died. She lived 16 days after the injury. The pathologist of the County Hospital told me at that time that she was posted and they found no injuries to the bony structures but the brain was lacerated in several places and there was considerable edema of the brain.

*Deceased, June 18, 1937.

2. *Delirious State*. This is a condition where a person becomes disoriented in all spheres with a vivid hallucinosis of some or all of the senses, the most common that of sight and hearing. He may perform almost any act during his delirium, but it is a reaction to his hallucinosis. After recovering from the delirium, he will have an amnesia for current events but will remember the hallucinosis he experienced during his delirium.

Delirium is commonly experienced in persons suffering from infectious diseases, either before the onset of the disease (initial delirium), during the disease (fever delirium) or after recovering from the disease (post infectious psychosis). It is also met in conditions where bodily resistance is suddenly lowered, like excessive hemorrhage, starvation, shock, sun-stroke and severe mental trauma. It is also met in intoxications like alcohol, lead, cocain and many other poisons.

The pathological conditions met in those who have died are edema of the brain and congestion of the cerebral vessels.

3. *Catatonic State*. In this state a person will suddenly become stuporous, motionless, rigid or restless, excited and very active. He may also hallucinate during his excitement. He may perform almost any act, which may be of short or long duration and when recovering will remember current events and also some of the foolish things he has performed. However, he cannot explain why he had done them.

Their acts generally have no relation to their hallucinosis, although sometimes they refuse food on account of voices that tell them not to eat. This condition is commonly met in dementia praecox. It is also met in toxemias and I have seen them in alcoholics. I have seen one case in a woman who had two attacks, the first at 53 years and the other at 58 years, which were undoubtedly due to arteriosclerosis. They seldom die early in the attack and there are few post mortem studies. In the few autopsies I have seen the most characteristic findings were in the heart. The heart was soft, flabby and somewhat congested, suggesting an acute myocarditis, and the cerebral vessels were congested.

4. *Confusional State* is a condition where a person becomes dazed. He is only partially oriented. He may recognize people but cannot tell time. Some of them, when they are at the

hospital, will recognize the fact that they are not at home but could not tell the nature of the place, even after seeing nurses in their uniforms and doctors examining them, nor could they tell how and why they came to the hospital. After telling them that they are in a hospital and why they came, they will recognize the fact but soon forget it. They will carry out commands if they understand what is wanted of them. They may or may not hallucinate, if they do, as a rule they do not react to them. This condition is generally found in toxemias, especially in morphine, chloral, bromide and veronal poisoning. In the last three we may also have physical findings resembling general paralysis but as a rule they recover rapidly.

Confusional states are also met in infectious and post infectious conditions. We had a young woman at the Chicago State hospital who, nine days after a normal delivery and doing well for nine days, developed a condition resembling a confusional state and has completely recovered in three weeks. Confusional states are also met in the beginning of dementia praecox. Persons suffering from confusional states seldom die during the acute stage and very few pathological studies were made.

5. *Bewildered State* is a condition where a person develops a condition where he looks bewildered and fearful. He generally wanders around the ward aimlessly, seldom speaks spontaneously but as a rule he does not bother any one and when spoken to does not answer readily but correctly, if at all. As a rule they also hallucinate but seldom react to them. This condition is generally met in the beginning of dementia praecox. They seldom die in the acute attack and very little pathology of this condition is known.

6. *Korsakoff's Syndrome* is a condition where a person develops a marked memory defect and tries to fill in the defect with events he has experienced during his life commonly known as fabrication of memory. It is a condition where a person will tell you of many activities or experiences which happened to him that day or previous days but which did not actually happen. The person himself actually believes in the happening and he is not trying to lie. It is generally met with in polyneuritis due to toxemias like alcohol, lead, etc. But it is also met

without polyneuritis in other conditions like senility or general paralysis. As Korsakoff's syndrome is met only with other forms of mental diseases and is not an entity, the pathological study is that of the disease itself, of which it is the syndrome.

7. *Demented States.* Almost everyone understands the word dementia. It is derived from dement—out of mind, and it is used in regard to persons who decline in mental faculties with memory loss or poor reasoning power to complete disorientation. It is generally met in general paralysis, senility, arterio-sclerosis and the terminal stages of chronic alcoholism and in some of the dementia praecox group.

The pathological condition of general paralysis is fairly well known. It is a degeneration of the brain cells and infiltration of the cerebral vessels with round cells, plasma cells, etc. *Cerebral Arteriosclerosis:* The name itself tells its pathology. In senility, in addition to the atrophy found in the brain, changes in the cerebral vessels are always found.

In conclusion I may say, in all those cases, where post mortem studies were made, changes in the cardiovascular system were found. Adding psychosis met in vascular syphilis and the bluish discoloration of the extremities together with edema of the feet, that is so commonly met in dementia praecox cases, changes in the cardiovascular system undoubtedly play quite a role in the causes of insanity. The old saying "that a man is as old as his arteries" is just as true with the mind as it is with the body.

Society Proceedings

COOK COUNTY

CHICAGO MEDICAL SOCIETY

Regular Meeting, Wednesday, December 15, 1937

SYMPOSIUM ON UNDULANT FEVER

The History, Epidemiology and Pathology of Undulant Fever. William H. Holmes

The Symptomatology, the Clinical and Serological Diagnosis and Treatment of Undulant Fever. James G. Carr

The Veterinary Aspects of Undulant Fever.

J. M. Buck, Animal Diseases Station,
Beltsville, Maryland.

The Occupational Hazards of Undulant Fever.

W. H. Lipman.

Discussion, Robert W. Keeton, C. Philip Miller.

Marriages

MELVIN REESE GUTTMAN to Miss Eleanor Given, both of Chicago, December 5.

CHARLES OTTO REINHARDT, Mascoutah, Ill., to Miss Agnes Potasik of Lincoln, in Chicago, September 18.

PAUL M. RICE, Chicago, to Miss Mary M. Gardner of Baltimore, May 12, at Santa Fe, N. M.

EDWIN R. TALBOT, Joliet, Ill., to Miss Dorothy Constance Hoyt at Miami Beach, Fla., October 15.

Personals

Dr. Don C. Sutton addressed the Colorado Post-Graduate Assembly in Denver, December 15 on "Obscure Fevers, Rheumatic Heart Disease and Arteriosclerosis."

Dr. O. E. Van Alyea read a paper at the Cleveland Clinic, Cleveland, Ohio, December 9, on "The Frontal Sinus, Anatomic and Clinical Considerations."

Dr. Eric Oldberg addressed the Macon County Medical Society at Decatur, December 21, on the subject, "Signs and Symptoms of Surgical Lesions of the Spinal Cord."

Dr. D. A. Horner gave a talk on "Home Versus Hospital Deliveries" before the Hancock County Medical Society at Carthage, December 6.

Dr. Leon Unger gave a paper on "Eczema in Children" before the Scott County Medical Society of Iowa at Davenport, December 7.

Dr. F. E. Senear gave a talk on "Diagnosis and Treatment of Early Syphilis" before the Will-Grundy County Medical Society at Joliet, December 8.

Dr. William J. Pickett gave a paper on "Thyroid Surgery" at Rantoul before the Champaign County Medical Society, December 9.

Dr. Arthur F. Abt gave a talk on "Preventive Methods for Contagious Diseases," before the Will-Grundy County Medical Society, at Joliet, December 1.

Dr. Alfred D. Biggs gave a talk on "The Premature Infant," before the members of the Lee and Whiteside County Medical Societies at Dixon, December 2.

Dr. James H. Wallace and Joseph L. Baer presented papers on "The Rheumatic Heart in Children," and "Contraindications to Cesarean Section," before the Doctors of Union, Perry and Jackson Counties, December 2.

Dr. W. B. Serbin gave a paper on "Repair of Obstetric Injuries," before the doctors of Coles-Cumberland County Medical Society at Mattoon, December 2.

Dr. James E. Lebensohn addressed the Rock River Valley Eye, Ear, Nose and Throat Society at Rockford, Ill., Dec. 17, on "Refinements of Refraction."

Dr. Joseph L. Baer addressed the Tri-county Society Meeting at Pinkneyville, Illinois, December 2, 1937, on "Contra Indications to Cesarean Section"

Doctor Kretschmer went to Denver to conduct a clinic, December 17, on diseases of the Prostate and their treatment and read a paper on Malignant Tumors of the Kidney in children and adults at the Post Graduate meeting of the Colorado State Medical Society held in Denver.

The Past Presidents of the Aux Plaines Branch are planning to honor Dr. Mary Jeanette Kearsley, 5652 Race Avenue, Chicago, Illinois, who has been in active practice 50 years, by giving a banquet at the Oak Park Arms Hotel, Washington Boulevard and Oak Park Avenue, January 19, 1938. A number of her classmates in College and Cook County Hospital are expected to be present to felicitate Dr. Kearsley. Dr. Fishbein will be the speaker.

Dr. Kearsley was the first and only woman to be elected president of the Aux Plaines Branch, an honor few women are privileged to enjoy.

The past presidents hope as many of the Aux Plaines members as can will attend and help celebrate this auspicious occasion.

Dr. Lee C. Gatewood, Chicago, discussed "Gastric and Duodenal Ulcer" before the Will-Grundy County Medical Society at Joliet, November 24.

Dr. Russell M. Wilder, Rochester, Minn., discussed "Pathogenesis and Etiology of Diabetes" at a meeting of the North Side branch, December 2.

At a meeting of the Evanston branch December 2, the speakers included Dr. Budd C. Corbus on "A Serological Control of Neisserian Infections with the Bouillon Filtrate."

The Chicago Orthopedic Society was addressed December 10, among others, by Dr.

Ralph K. Ghormley, Rochester, Minn., on "Some Unusual Lesions of Vertebrae."

Dr. Solomon Strouse, formerly of Chicago, has been appointed associate clinical professor of medicine at the University of Southern California Medical School, Los Angeles.

Dr. Walter H. Baer, Peoria, discussed "Shock Therapy of Schizophrenia: The Use of Insulin and Metrazol" before the Sangamon County Medical Society in Springfield, December 2.

At a meeting of the Society of Medical History of Chicago, November 30, Drs. Clarence A. Earle, Des Plaines, Ill., discussed "Pioneer Medicine" and William Allen Pusey, "Giants of Medicine in Pioneer Kentucky."

Dr. Walter C. Alvarez, Rochester, Minn., addressed a joint meeting of the Englewood and Stock Yards branches of the Chicago Medical Society December 7; "The Care of the Aged."

Dr. Arthur E. Lord, Plano, surgeon general, Illinois National Guard, was guest of honor at a dinner in Chicago, November 17, marking his election as president of the Association of Military Surgeons of the United States.

The Du Page County Medical Society was addressed in Elmhurst November 17 by Drs. Roland P. Mackay on "Treatment of Neurosyphilis" and Eric Oldberg on "Surgical Treatment of the Complications of Neurosyphilis"; both are of Chicago.

Dr. Max Thorek has been made an Honorary Member of the Surgical Society of the University of Sofia, Bulgaria.

Drs. William H. Browne and Julius H. Hess present the scientific program before the North Shore branch December 7; their subjects "Prevention and Management of Premature Labor," and "Care of Premature Babies" respectively.

At a meeting of the medical societies of Lee and Whiteside counties in Sterling, November 18, Drs. Philip H. Smith, Evanston, Ill., and Raymond F. Grisson, Chicago, spoke on "Contraindication of Cesarean Section, Prevention and Treatment of Abortion" and on "Treatment of Infectious Diseases" respectively.

News Notes

—Six cases of smallpox were discovered in the Roseland district, December 11, according to the Chicago Tribune. Four of the patients were

members of one family and the other two were neighbors. None of the patients have been vaccinated successfully, it was stated. These are the first cases of smallpox reported in the city since April.

—The public health units in Champaign and Urbana have been combined in a new health district, replacing the former separate health activities in the two townships. Dr. G. Howard Gowen has resigned as assistant to the chief, division of communicable diseases, state department of health, Springfield, to direct the new unit, effective December 6.

—The Chicago Tuberculosis Institute and the Municipal Tuberculosis Sanitarium are sponsoring a traveling x-ray unit to combat tuberculosis among school children in Chicago. The unit was put into service at the Spalding School for Crippled Children recently. It contains dressing rooms and equipment for taking 400 x-ray plates a day and will be moved from school to school, newspapers reported.

—The new building containing the medical and dental laboratories of the University of Illinois has been completed and occupied. The new unit is of red brick collegiate gothic and cost \$1,550,000. Seven of the fifteen floors are devoted to the medical facilities and the rest of the dental clinics. The building connects through corridors with a similar unit entirely occupied by the medical school and with the Illinois Research and Educational Hospital, which supplies the patients and nurses. New equipment includes a biplane fluoroscope. A cancer clinic is to be started in lead lined rooms in the basement with \$300,000 already appropriated for radium and equipment, it is reported. Dr. David J. Davis is dean of the medical school; Frederick B. Noyes, D.D.S., of the dental school, and Dr. Major H. Worthington is in charge of the research and educational hospital.

—Dr. Charles K. Petter of the staff of the Glen Lake Sanatorium, Oak Terrace, Minn., has been appointed director and supervisor of the Lake County Tuberculosis Sanatorium shortly to be erected. He will take office about January 1. The voters of the county approved at the November, 1936, election a proposition to build a tuberculosis sanatorium with tax revenue to be collected over a period of ten years starting next summer, newspapers report.

—The annual state conference on public health held in Springfield, December 9-10, under the auspices of the state department of public health. The speakers included:

Dr. Philip C. Jeans, Iowa City, Nutritional Deficiency in Public Health.

Herbert F. Moore, ScD., Urbana, Social Engineering in the Health Field.

Dr. Frederick T. Lord, Boston, Lobar Pneumonia and Serum Therapy.

Dr. Julius Levy, Newark, N. J., Preventive Mental Hygiene.

Dr. Irving S. Cutter, Chicago, Education in Preventive Medicine.

Dr. Don W. Gudakunst, Detroit, Newer Trends in School Health Practice.

Dr. Charles F. McKhann, Boston, Preventing Hospital Infections.

Dr. David C. Elliott, Hagerstown, Md., A Venereal Disease Program.

Dr. Paul H. Harmon, Springfield, Epidemiology of Poliomyelitis.

Dr. Guy Howard Gowen, Springfield, Trailer Laboratory in Typhoid Control.

—A fund of more than \$500,000 has been established for cancer research and investigation, the income of which will be used in Passavant Hospital. The institute will be known as the Patterson Institute for Cancer Research. Miss Edith Patterson, Sterling, Ill., is the donor in memory of her brother, Floyd Elroy Patterson, who died in 1928. Under the term of the agreement between Miss Patterson, Northwestern University and the hospital, the building occupied by the Passavant Hospital will be named the Floyd Elroy Patterson Building, although the unit will continue to be known as the Passavant Hospital, it was announced. The institute will be organized as a department of the hospital with a yearly appropriation of \$12,000 for treatment and research.

Deaths

EDWIN MELVILLE ADAMS, Gridley, Ill.; Barnes Medical College, St. Louis, 1901; a Fellow, A. M. A.; aged 60; on the staffs of St. Joseph Hospital and the Mennonite Hospital, Bloomington, where he died, September 26, of cerebral hemorrhage.

AMOS D. BATES, Camp Point, Ill.; Chicago Medical College, 1882; member of the Illinois State Medical Society; aged 82; died, September 6, at St. Margaret's

Hospital, Spring Valley, of hypostatic pneumonia as a result of a fall and fracture of the right leg.

SIMON P. BERNIS, Willow Hill, Ill.; Missouri Medical College, St. Louis, 1881; aged 78; died, September 24.

JOHN WILLIAM BERRYMAN, Scottville, Ill.; Keokuk (Ia.) Medical College, College of Physicians and Surgeons, 1902; aged 77; died, October 17, of carcinoma of the stomach.

ARTHUR DAVENPORT BLACK, Chicago; Northwestern University Dental School, Chicago, 1900; a Fellow, A. M. A., Northwestern University Medical School, Chicago, 1901; for twenty years dean of the Northwestern Dental School, and a member of the faculty since 1900, as professor of oral surgery, operative dentistry and oral pathology; a director of the Chicago Tuberculosis Institute; fellow of the American College of Surgeons; was an honorary member of scientific societies in America and abroad, including the Royal Society of Medicine of England, the German Academy of Natural Sciences and the Swedish Dental Society; past president of the Illinois State Dental Society, the American Institute of Dental Teachers and the International Association for Dental Research and served for several years on the National Research Council; in 1933 president of the Chicago Centennial Dental Congress; during the World War was advisor to the Surgeon General of the Army, in Washington; for twelve years served on the staff of St. Luke's Hospital; was the author of the "Index of Periodical Dental Literature," consisting of thirteen volumes; author and editor of four volumes of G. V. Black's work on "Operative Dentistry"; aged 67; died, December 7, in the Swedish Covenant Hospital, of myelogenous leukemia.

EDWIN L. CLARK, Rockford, Ill.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1883; aged 88; died, October 21, of senility.

WILLIAM R. DALE, Sumner, Ill.; University of Louisville (Ky.) Medical Department, 1877; aged 83; died, September 22, of coronary thrombosis.

YEPROS MARTIN DODOKYAN, Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1908; member of the Illinois State Medical Society; aged 62; died, October 16, of mitral insufficiency, chronic nephritis and arteriosclerosis.

HAYDN LYLE FISCHER, Ottawa, Ill.; Northwestern University Medical School, Chicago, 1909; member of the Illinois State Medical Society; served during the World War; past president of the Henry County Medical Society; aged 53; died suddenly, September 4, of angina pectoris.

CHARLES FREDERICK FRIEND, Chicago; Hering Medical College, Chicago, 1895; member of the Illinois State Medical Society; formerly a medical missionary in Africa; on the staff of the Evangelical Hospital; aged 72; died, October 2, of carcinoma of the gallbladder and acute pancreatitis.

RALPH ALLISON GOODNER, Anna, Ill.; Rush Medical College, Chicago, 1888; Jefferson Medical College of Philadelphia, 1891; medical superintendent and managing officer of the Anna State Hospital; aged 72; died, September 19, of enteritis and chronic myocarditis.

THOMAS HENRY HALL, Brighton, Ill.; Rush Medical College, Chicago, 1884; member of the Illinois State Medical Society; formerly mayor, and member of the board of health; aged 77; died, September 10, of sarcoma of the pelvic bones with metastasis to lungs and other organs.

DON H. HINCKLEY, Chicago; Jenner Medical College, Chicago, 1909; aged 59; died, September 5, in the Victory Memorial Hospital, Waukegan, Ill., of injuries received in a fall from a tree.

LUDWIG FREDERICK HOOGE, Chicago; Chicago Homeopathic Medical College, 1889; a Fellow, A. M. A.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1903; aged 73; on the staff of the South Shore Hospital, where he died, October 7, of coronary thrombosis.

JAMES MANUEL JOHNSON, McLeansboro, Ill.; University of Illinois College of Medicine, Chicago, 1930; a Fellow, A. M. A.; aged 35; died, September 24, in the Barnes Hospital, St. Louis, of infantile paralysis.

SOLOMON JONES, Danville, Ill.; Illinois Medical College, Chicago, 1902; a Fellow, A. M. A.; past president and secretary of the Vermilion County Medical Society; past president of the Aesculapian Medical Society of the Wabash Valley; fellow of the American College of Surgeons; formerly member of the city board of education; on the staff of the Lake View Hospital; aged 65; died, September 25, of cerebral hemorrhage.

CYRIL JAMES LARKIN, Chicago; University of Illinois College of Medicine, Chicago, 1915; member of the Illinois State Medical Society; assistant clinical professor of surgery, Loyola University School of Medicine; fellow of the American College of Surgeons; on the staff of the Mercy Hospital; aged 45; died, September 3, at St. Agnes Hospital, Fond Du Lac, Wis., of injuries received in an automobile accident.

SOLOMON OLIVER MAYERSON, Chicago; Loyola University School of Medicine, Chicago, 1921; aged 48; died, September 2, of cerebral vascular hemorrhage.

GEORGE ALBERT McDONALD, Fairfield, Ill.; Hahne-mann Medical College and Hospital, Chicago, 1895; aged 72; died, September 28, of acute endocarditis.

WILLIAM B. MCINTOSH, Colfax, Ill.; Barnes Medical College, St. Louis, 1895; aged 71; died, September 8, of carcinoma of the prostate.

JOHN WASHINGTON MEEK, Chicago; Rush Medical College, Chicago, 1881; aged 78; was found dead, September 17, of gunshot wounds of the head.

FREDERICK SUMNER SELBY, Chicago; Rush Medical College, Chicago, 1893; a Fellow, A. M. A.; aged 65; on the staff of the Garfield Hospital, where he died, September 27, of empyema of the gallbladder and chronic myocarditis.

OTMAR THURLIMANN, Harvey, Ill.; Rush Medical College, Chicago, 1925; member of the Illinois State Medical Society; aged 37; died, September 14, in a hospital at Duluth, Minn., of streptococcal meningitis.

OSCAR D. WHALIN, Chicago; Rush Medical College, Chicago, 1890; aged 71; died suddenly, September 12, of cerebral hemorrhage and arteriosclerosis.

The swaddled infant pictured at right is one of the famous works in terra cotta exquisitely modeled by the fifteenth century Italian sculptor, Andrea della Robbia. In that day infants were bandaged from birth to preserve the symmetry of their bodies, but still the gibbous spine and distorted limbs of severe rickets often made their appearance.



A bambino from the Foundling Hospital, Florence, Italy,—A. della Robbia

Glisson, writing in 1671, described an ingenious use of swaddling bands — "first crossing the Brest and coming under the Armpits, then about the Head and under the Chin and then receiving the hands by two handles, so that it is a pleasure to see the Child hanging pendulous in the Air . . . This kind of Exercise . . . helpeth to restore the crooked Bones. . . ."

STRAPPED FOR RICKETS

SWADDLING was practised down through the centuries, from Biblical times to Glisson's day, in the vain hope that it would prevent the deformities of rickets. Even in sunny Italy swaddling was a prevailing custom, recommended by that early pediatrician, Soranus of Ephesus, who discoursed on "Why the Majority of Roman Children are Distorted."

"This is observed to happen more in the neighborhood of Rome than in other places," he wrote. "If no one oversees the infant's movements, his limbs do in the generality of cases become twisted. . . .

Hence, when he first begins to sit he must be propped by swathings of bandages. . . ." Hundreds of years later swaddling was still prevalent in Italy, as attested by the sculptures of the della Robbias and their contemporaries. For in-

fants who were strong Glisson suggested placing "Leaden Shooes" on their feet and suspending them with swaddling bands in mid-air.

How amazed the ancients would have been to know that bones can be helped to grow straight simply by internal administration of a few drops of Oleum Percomorphum. What to them would have been 'a miracle has become a commonplace of science. Because it can be administered in drop dosage, Oleum Percomorphum is especially suitable for young

and premature infants, who are most susceptible to rickets. Its vitamins A and D derived from natural sources, this product has 100 times the potency of cod liver oil.* Important also to your patients, Oleum Percomorphum is an economical antiricketic.

Oleum Percomorphum offers not less than 60,000 U.S.P. vitamin A units and 8,500 U.S.P. vitamin D units per gram. Supplied in 10 and 50 c.c. bottles, also in boxes of 25 and 100 ten-drop soluble gelatin capsules containing not less than 13,300 vitamin A units and 1,850 vitamin D units (equal to more than 5 teaspoonfuls of cod liver oil*).

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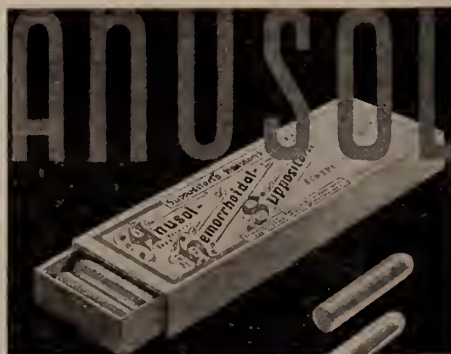
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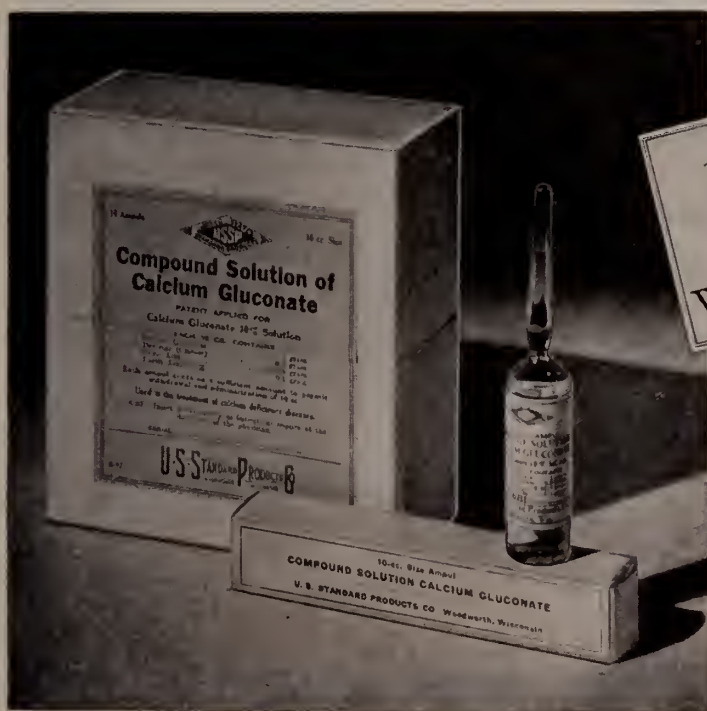
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Vitamin B deficiency and polyneuritis are definitely generation of the spinal cord, formerly considered of toxic origin, arise from defective nutrition and may be successfully treated by supplying the deficient material." Strauss, M. B. *New England J. Med.* 215:1164, 1936.

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*CORCORAN,
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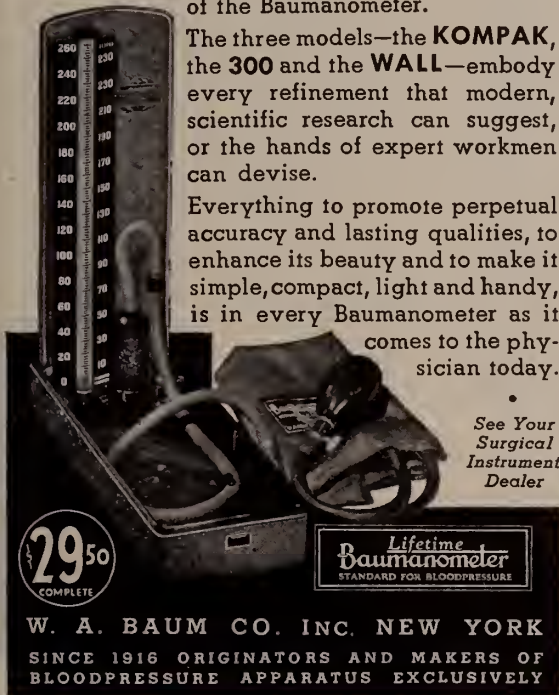
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Book Reviews

ARTIFICIAL FEVER PRODUCED BY PHYSICAL MEANS; ITS DEVELOPMENT AND APPLICATION. By Clarence A. Neymann, M. D. Springfield, Illinois. Baltimore, Maryland. Charles E. Thomas. 1938. Price \$6.00.

This book provides accurate knowledge of what is known about artificial fever. Its purpose is to assist the physician to solve successfully problems in producing fever in man by means of high frequency currents and other physical methods.

The book provides a clear and easier insight into artificial fever and the methods of its production. The possibility and practicability of producing fever by high frequency currents in man for the purpose of healing disease was first demonstrated by the Author and S. L. Osborne in a preliminary report as early as September, 1929. The Author's first hand knowledge and excellent ability to present a clear view of the present status of this important medical procedure is shown in this practical, impartial, and able work which will satisfy every requirement of practitioners and students for exact information.

THE CEREBROSPINAL FLUID. By H. Houston Merritt, M. D., Assistant Professor of Neurology, Harvard Medical School; Director of the Cerebrospinal Fluid Laboratory, Boston City Hospital; and Frank Fremont-Smith, M. D., Formerly Assistant Professor of Neuropathology, Harvard Medical School; formerly Director of the Cerebrospinal Fluid Laboratory, Boston City Hospital. With a Foreword by James B. Aver, M. D. 333 pages with 17 illustrations. Philadelphia and London: W. B. Saunders Company, 1937. Cloth, \$5.00 net.

This work presents facts. It does not advance a theory of physiology, or stress the merits of any single test. It represents an honest effort to correlate recognized and well tried tests, performed under standard and personally observed conditions.

CONCEPTS AND PROBLEMS OF PSYCHOTHERAPY. By Leonard E. Hinsie, M. D. New York. Columbia University Press. 1937. Price \$2.75.

It is the aim of this book to indicate the general conceptions that prevail with respect to the structure and functions of the mind, and to show, as well as possible, what influence these conceptions have had upon the problems of psychotherapy.

Although the material is oriented in therapy, the author has presented much more. In fact he has given an evaluation of psychiatric methods of study and of the current concepts of the mind. His work must be recognized as an attempt to gain a comprehensive view of the facts in a subject or field much too extensive to be exclusively monopolized by one method of investigation. Physicians and students who are making serious efforts to understand the development and applications of psychotherapy, and to get to the roots of the situation, will find this book a welcome guide, formulated from a wide background of experience.

PRACTICAL PROCTOLOGY. By Louis A. Buic, A. B., M. D., F. A. C. S., Head of Section on Proctology, The Mayo Clinic, Professor of Proctology, The Mayo Foundation for Medical Education and Research, Graduate School, University of Minnesota. 512 pages with 152 illustrations. Philadelphia and London: W. B. Saunders Company, 1937. Cloth, \$6.50 net.

This work presents in a practical manner all the old and new regarding the subject of Practical Proctology. It represents the authors vast experience.

THE ENDOCRINES IN THEORY AND PRACTICE. Articles published from the British Medical Journal. Philadelphia. P. Blakiston's Sons & Co., Inc. 1937. Price \$3.50.

This is a compilation of articles which appeared in the British Medical Journal from October 17, 1936, to May 15, 1937, in response to many requests.



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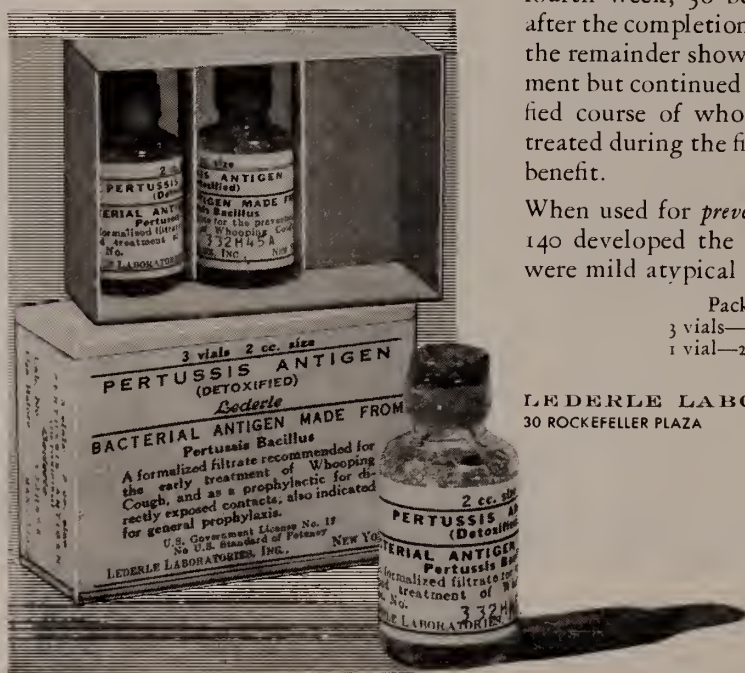
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NINETY-EIGHTH ANNUAL MEETING AT SPRINGFIELD, MAY 17, 18, 19, 1938

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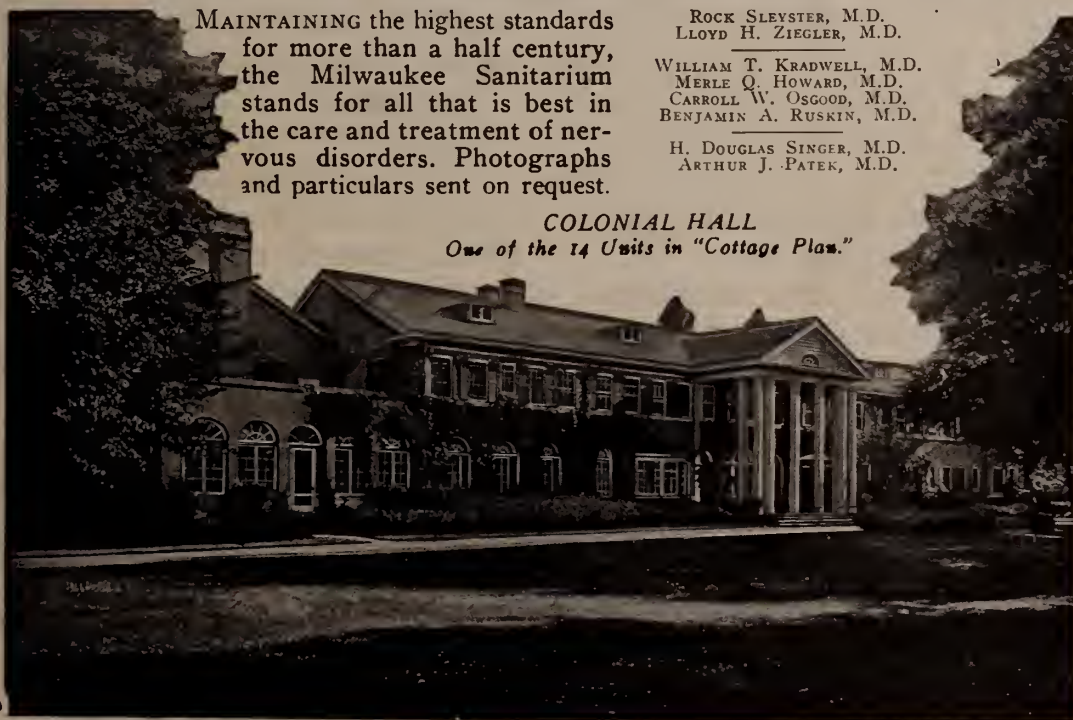
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1. 1937. J. Am. Med. Assn. 108, 15.
1935. Ibid. 104, 1377.

2. 1934. U. S. Pub. Health Rpts.
49, 755.

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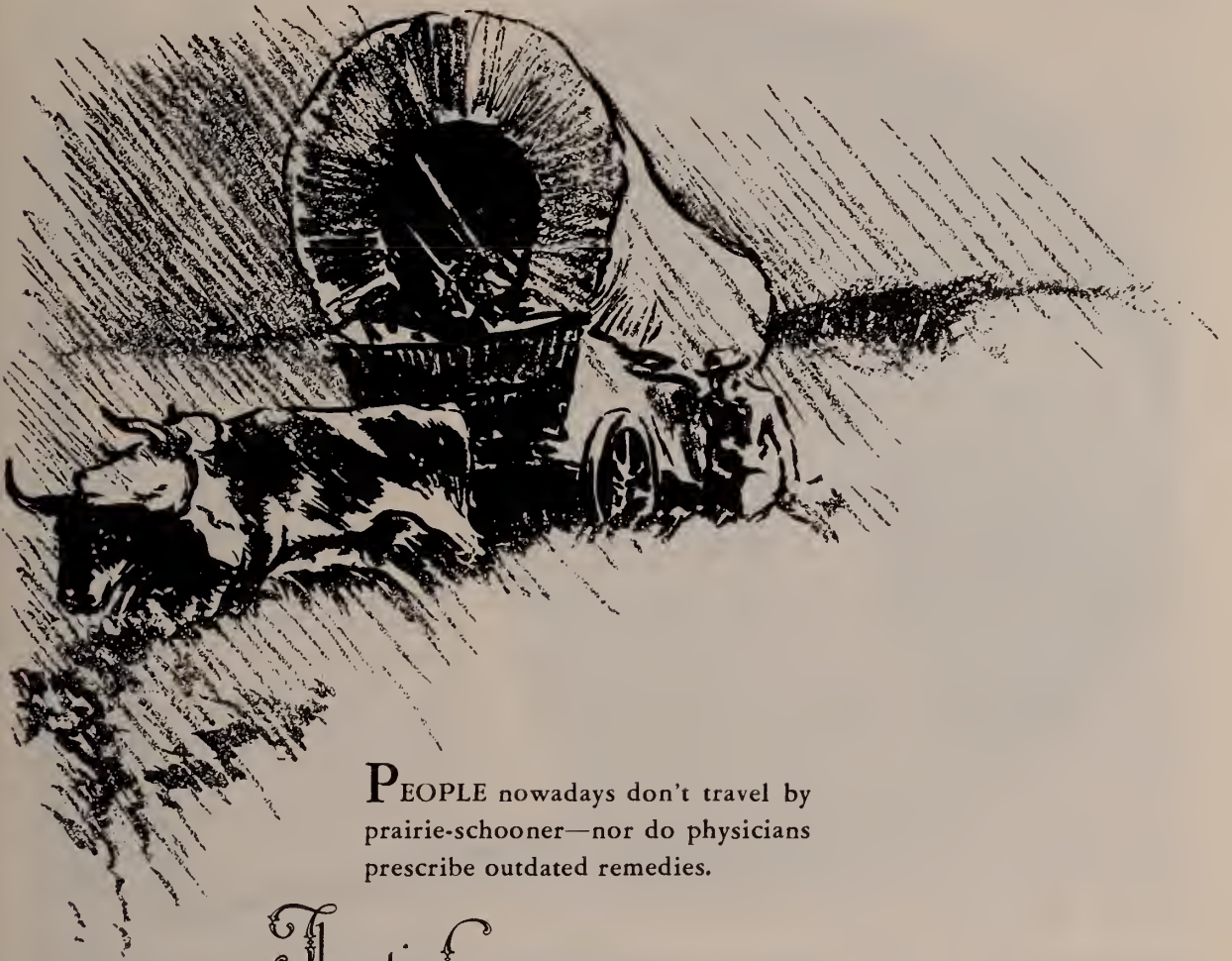


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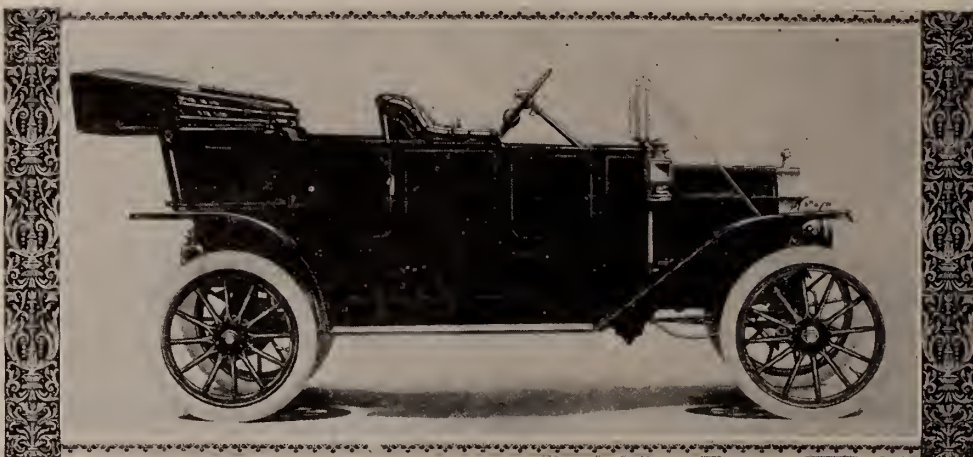
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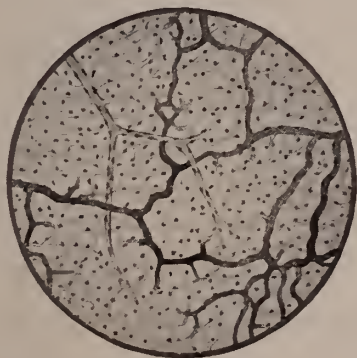
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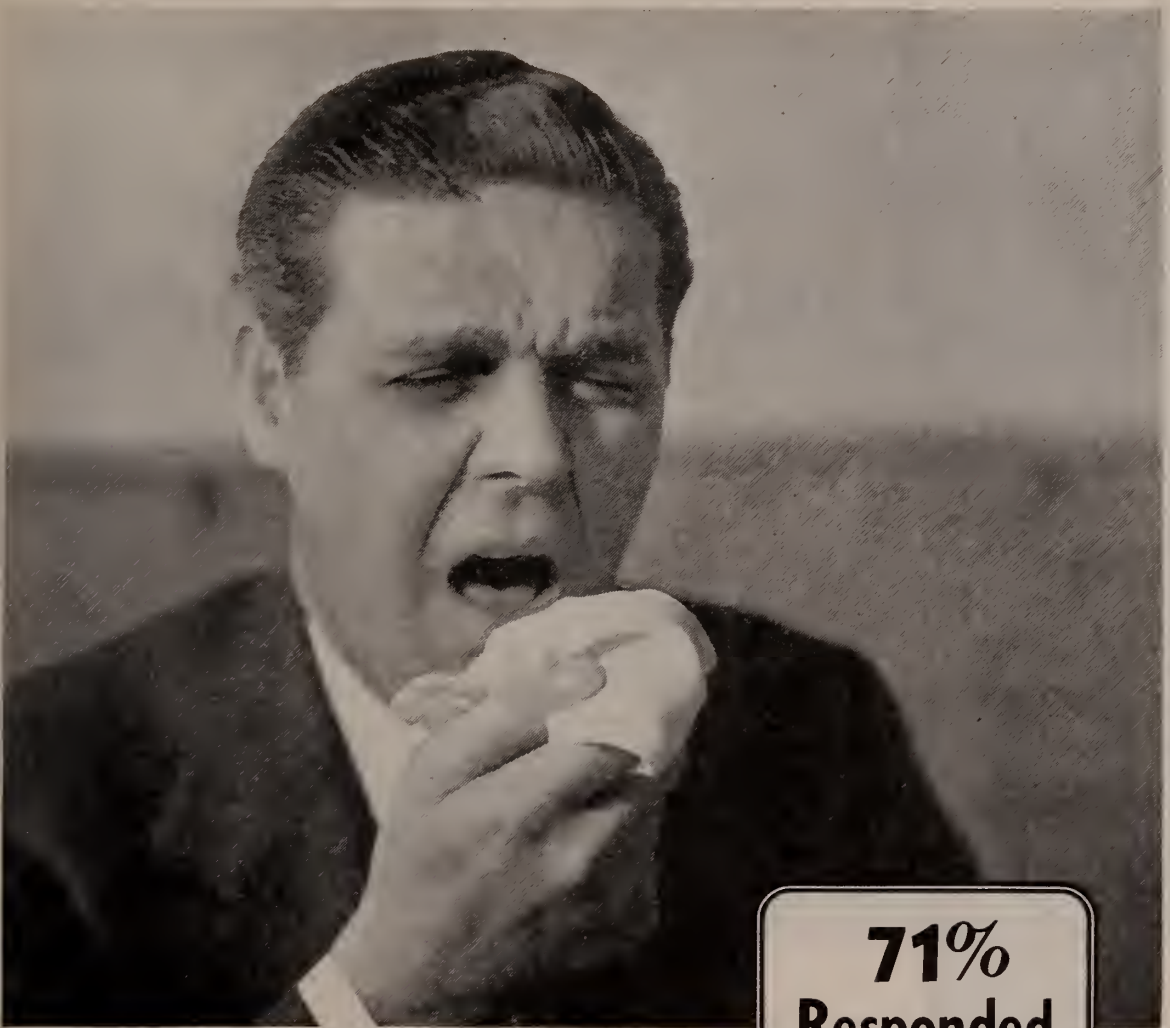
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*Canadian Medical Association Journal, 37, 38-41, 1937.

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**Proc. Soc. Exp. Biol. and Med., 1934, 32, 241-245
Laryngoscope, Feb. 1935, Vol. XLV, No. 2, 149-154
N. Y. State Jour. Med., June 1935, Vol. 35, No. 11
Arch. Otolaryngology, Mar. 1936, Vol. 23, No. 3
Laryngoscope, Jan. 1937, Vol. XLVII, No. 1, 58-60*

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ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF

THE ILLINOIS STATE MEDICAL SOCIETY

VOL. 73

OAK PARK, ILL., FEBRUARY, 1938

No. 2

ILLINOIS MEDICAL JOURNAL

Published monthly by the Illinois State Medical Society under the direction of the Publication Committee of the Council.

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Send original article, advertising copy, cuts and all communications relating to advertising to ILLINOIS MEDICAL JOURNAL, 30 N. Michigan Avenue, Chicago.

Membership correspondence to Dr. Harold M. Camp, Monmouth, Ill.

Society proceedings and news items and changes in the mailing list to Dr. Henry G. Ohls, Managing Editor, 1618 Juneway Terrace, Chicago.

Subscription price of this JOURNAL to persons not members of the Illinois State Medical Society is \$3.00 per year, in advance, postage prepaid, for the United States, Cuba, Porto Rico, Philippine Islands, Hawaiian Islands and Mexico. \$4.00 per year for all foreign countries included in the postal union. Canada, \$8.50. Single current copies, 50 cents.

Editorials

UNITED WE STAND, DIVIDED WE FALL

There are a number of physicians who followed the siren call of the wolf's voice masked with butter in the report of the "American Foundation Proposals for Medical Care," who appear now to be in the same sad position of the man who caught a wildcat by the tail. He couldn't let go and he couldn't hang on.

That they had grabbed a wildcat some of these doctors seemed not to realize until the *Journal of the American Medical Association* in its issue of November 11, 1937, published an editorial entitled "Principles and Proposals for Medical Care." In this editorial petitions circulated by a certain physician and the signers thereof received what one of the signers has termed "a severe castigation." Since then many of the signers have been besieging medical journals all over the country to give them space for their "reasons." Perhaps no better index of the stand taken by the A. M. A. can be found than this reply by the editor of the *Journal of the A. M. A.* to one of those "signers" who wished to justify his signing the principals and proposals documents. The letter sent to this man by the Editor of the *Journal of the A. M. A.* and which the doctor in question has had printed and is circulating on his own responsibility reads as quoted: "Dear Doctor, I have your letter of Oct. 19 enclosing one addressed to the Editor in which you discuss the reasons for signing the petitions circulated by Dr.

We have received a number of letters from those who signed, telling why, and from those who did not sign, telling why not. Space however is simply not available for these items in the JOURNAL. They are being collected and will no doubt be sent with the editorial to the Board of Trustees for its consideration and perhaps also to the House of Delegates."

(Signed) Editor, *Journal A. M. A.*

In this instance the physician in question made his own formal demand on the Board of

Trustees. In another letter it has been made manifest that the Trustees voted to take no action. An encouraging sign to the faithful followers of medicine who realize the truth of the early American slogan, "United We Stand, Divided We Fall."

The instigators of this especial piece of anti-American anti-medical propaganda are surely sadly beset and much put about in the endeavor to patch up their fences.

In this regard let quotation be made from the reply sent by a prominent Illinois medico to the bemoaning and misguided doctor who was irate because he could not pierce the defense of the A. M. A.

"Doctor I would respectfully call your attention to the action of the House of Delegates during the 1937 session. This action was taken as the results of an overwhelming majority vote.

"Doctor, I want to be fair and I am sure that each and every delegate who represents you and your group in the House has the same desire. I need not tell you how the House of Delegates is made up. It is the court of last appeal and has supreme jurisdiction over the Board of Trustees on policies of the nature of the purposes, as set forth by your group. Doctor Fishbein has no power to rise above the order of the Board of Trustees, on matters of policy, whatever his personal view may be. He is the editor of our A. M. A. Journal, the official journal of our organization and I cannot help but feel that you would not desire Dr. Fishbein to violate the trust imposed in him to cover what seems an apparent mistake.

"It is my personal opinion that the proposal set forth by the group had no time or place in the true ethical issue of Medical Service, as they were the outgrowth of the American Foundation for the Study of Government, which has not met the approval of the profession. This I am sure was known by each one of the group.

"I feel that you would not have our State JOURNAL carry in its columns that which the House of Delegates has said in no uncertain terms, is detrimental to the best interest of the progress of Medical Science and Service. If the JOURNAL opened its pages to this, then in my opinion it would be submitting itself to dictatorship of a minority interest.

"The last two lines of your letter, states 'it

depends upon what the governing body of the American Medical Association, do.' Inferring that if we refuse this request, that we are unfair in our judgment. Again, I remind you that the House of Delegates has rendered its decision.

"In closing let me speak in terms as a reformer. If your group has stepped outside the garden and realizes it, just come back and let all move along with the rank and file and abide by the will of the majority. Mistakes need not be made, but they will be made regardless of the need. We delegates will make mistakes and we must right them and we will."

And this copy of a reply sent by one of the most prominent medical men in the country to this same apostatic appeal:

"Your note of the third with enclosure has been duly received. Permit me in reply to express freely to you my reaction.

"On a matter of medical procedure I would gladly agree fully to your thesis. On a matter of public policy at the present time I believe a united front is imperative. Whatever your private belief may be, and we all may dissent at times, the place for such a discussion is in the forum of our professional body and not where the publicity can be used against the professional integrity and the homogenous advancement of the science of medicine.

"It therefore seems to me that a public journal is no place to exhibit a division of thought in the profession at a time of uncertainty, when the efforts of a group of moo-cow mammals and social theorists is tied up with a shallow, personal, irresponsible government headed toward the Hitlerization of America and which aims to destroy the only honest-to-God practice of medicine which remains free and unsubjugated in the world today.

"Your letter and similar ones, if such there be, will doubtless be brought before the house of delegates and properly considered in due time if the profession is not destroyed before the next meeting."

BUREAUCRATIC AUTOCRACY MEANS LAY DICTATION AND CONTROL

Dangerous indeed is the trend to specialization, over centralization; and group organization that tends to permit or to admit lay dictation or control of the practice of medicine and the

pauperizing of the profession by making the state bear the care of illness of its non-pauper citizens through tax levies; and further from the unfair competition to the legitimate doctor made by pay clinics, or by universities or corporations entering into the practice of medicine, with no superior skill to offer but backed up by the advertising that ethics forbids the respected physician to assume.

Pay clinics are springing up like mushrooms and everywhere are found examples of corporations and universities entering into the practice of medicine for profit.

Many complaints are heard as comment upon the economic situation of the doctor especially as regards unfair competition. For example, many doctors are bitter in their denunciation of the unfair competition offered by the Billings Hospital and the University of Chicago clinics among others. Not because superior medical service is rendered there but because the prestige of the university attracts patients who would not otherwise employ members of those staffs. By engaging in the practice of medicine in competition with private practitioners it seems likely that any university is missing an opportunity to become a consultation center of great service alike to the public and the profession.

In Chicago the Public Health Institute is always a thorn in the doctor's flesh. It seems likely that its greatest service has been rendered to its founders and the director of its activities. Its excuse for existence is the claim that treatment has been made accessible to some persons who could not have paid for it elsewhere and that other persons have been persuaded to accept treatment there who would not otherwise have received any. It is doubtful if either of these claims could be substantiated.

Some practices of the Infant Welfare societies are irritating to physicians. The Rosenwald Foundation proposes to rescue the "man of moderate means" from the grasp of the ignorant and inefficient private practitioner. Yesterday it was the poor man who needed the assistance of the philanthropist, today it is the man of moderate means, tomorrow even the rich man may need this assistance. The private practitioner will have become entirely incompetent except when he shines in the reflected light of some Foundation. These several phases are all incidental manifestations of that comment made in January, 1922, by the New York State Judiciary

Convention that "In the United States there are everywhere being developed at enormous cost in the most intensive fashion a multitudinous bureaucracy with autocratic powers and arbitrary discretion and a vast system of complicated and often conflicting administrative jurisdictions in relation to property and business and personal conduct, which reach and affect almost every individual, and most of which only a few years ago would have been regarded as of strictly personal concern and not to be tolerated by a free people.

"Extensive legislation, executive and judicial powers are being vested and combined in administrative bodies in distinct and reckless disregard of the sound principles of the separation of governmental powers which was deemed so essential to the due protection of individual rights by the wise founders of our republican form of government.

"Even controverted questions of law and fact, heretofore regarded as fundamentally and exclusively for judicial determination, are being intrusted to bureaucratic discretion, and for orderly judicial procedure as known to our fathers and the competent and impartial interpretation of the laws by learned judges and juries, arbitrary methods and untrained judgment are being constantly substituted."

More elements of state medicine, the direct outgrowth of such bureaucracy carry as a direct menace.

1. Complete control of the medical organization by the Federal Government, with every physician on the same basis as a building janitor.

2. Control of all medical schools by a Federal Medical Education Bureau. Medical students may receive tuition and maintenance free, and medical research will be controlled by the Medical Research Bureau.

3. Government control of hospitals and greater emphasis on the hospital training of students.

4. Abolishment of the private office, establishment of clinical groups with complete laboratory equipment.

5. State medicine can best be defined as the assumption by the commonwealth of those duties in connection with the prevention, cure or alleviation of disease, such as are commonly performed by private individuals who have been duly qualified and registered as physicians.

MEDICAL ECONOMICS

H. M. Camp, M. D.
E. P. Coleman, M. D.
John R. Neal, M. D.
I. H. Neece, M. D.
W. M. Hartman, M. D.

Edited by the Committee on Medical Economics
of the
Illinois State Medical Society
E. S. Hamilton, M. D., Chairman
Kankakee, Illinois

R. K. Packard, M. D.
Ralph Peairs, M. D.
C. B. Reed, M. D.
C. S. Skaggs, M. D.
C. E. Wilkinson, M. D.

Address all letters and communications to the Chairman.

So much of the time of the January meeting of the Council of the Illinois State Medical Society was taken up by the economic problems, there was scarcely time for the remainder of the business. And this in spite of the fact that a special meeting of the Economics Committee was held the day preceding to go over the main problems, which have appeared since the last meeting.

Some of the current criticisms of the manner in which the so-called Saltiel Bill is being administered were discussed. While it was generally agreed that the principles of the bill are correct, there are many administrative details of the same yet to be remedied. It was reported at the meeting that in the future, duplicate reports could be obtained on specimens of blood and smears sent to the State Laboratories according to the requirements of the Saltiel Law, by requesting the same at the time the specimens are sent in. This will furnish the attending physician with a permanent office record of the results of the test. In the past the report has been kept on file at the office of the County Clerk and the physician had no record. Now the original report will accompany the Certificate, while the duplicate is kept. But, remember, you must request the duplicate at the time the specimens are sent in. A more uniform system was advised for the different counties of the state, instead of each County Clerk making his own rules.

It was agreed that it is time for a definite policy in regard to the amount of aid the Medico-legal Committee can furnish members of the Society who are sued for malpractice should be arrived at in the near future. Since the May meeting of the House of Delegates, when the old plan was discontinued and the new one started, the members of the Illinois State Medical Society have not been clear as to just what assistance they were entitled and it was thought

urgent that they be furnished this information. Accordingly in the very near future there will be a special meeting of the Council to decide on these policies and the members will be informed of the results.

The education of both the lay and medical profession was discussed and it was generally agreed that there was still a great amount of work to be done all over the state. Every County society should have an active committee, which is both able and willing to make talks before any and all organizations requesting the same. No little group of men can afford either the time or the energy to make all these talks. It is unfair to ask them to do so. The more men who prepare themselves for this work, the sooner the medical profession will be properly informed on the subject, for it is well known that the one who gets the most out of any talk is the one who prepares the same.

A recent edition of Medical Economics contained a very good article on the subject, "Family Doctor or Federal Agent." This has also been printed in pamphlet form and should be read by every physician, whether he is in accord with the aforementioned magazine or not. For several years this magazine has stressed the importance of fighting State Medicine, and if we are fair minded we should accord it the credit due it, even though at times there is difference of opinion as to the magazine as a whole.

The recent report of the officials of the Public Health Service, based on WPA survey of some 800,000 families was printed in the Chicago Tribune of January 17th, 1938. As usual, the inference was made that the poor were not receiving the care they were entitled to. But at the same time the report said, "Among these people it is apparent the inadequate diet, poor housing, the hazards of occupation, and the instability of the labor market create immediate

health problems which are not being dealt with adequately." The above statement alone places the blame where it should be, on the shoulders of those responsible for underpaying of labor. Surely the medical profession is in no way responsible for these conditions, and we feel sure that more people are furnished free medical care by the individual family physician, who knows at the time the service is rendered that he will never be paid than are given free rent and food by all the storekeepers and landlords in the nation. A portion of the \$4,000,000 spent in obtaining this report would furnish a large amount of medical care even through the often criticized present manner of practicing medicine.

Recently it was mentioned in this column that the Federal Home Loan had contributed \$20,000 to the Group Health Association at Washington and that the plan was being expanded to some of the other cities of the nation. Now comes another advance in that direction with the formation of "The Committee for Cooperative Medical Service for Federal Employees" under the leadership of Dr. Paul Pearson, who recently was Governor of the Virgin Islands and who might be termed a "Lame Duck." He is predicting a large membership in the near future, possibly up to 50,000 or 100,000. How much assistance they will receive from government subsidies is not stated. But remember, every such Association takes away patients from the private practitioners of the nation and increases the impetus toward state medicine.

The recent discussion of the question, "What System of Medical Care Should We Have" on America's Town Meeting of the Air was most interesting. The presentation of the value of the present method of conducting the practice of medicine by Dr. Arthur C. Christie was very good and in our opinion much better than either of the other men. The medical profession should follow all such presentations and discuss the same with their patients.

We had hoped to have an article by the Chairman of the Council for this issue of the JOURNAL. At this time the same has not been received, so it is impossible to present it. Should it arrive in time for publication it will be included.

E. S. Hamilton,
Chairman of Committee on Medical Economics.

Correspondence

MATERNAL WELFARE COMMITTEE ILLINOIS STATE MEDICAL SOCIETY

PLATFORM FOR COUNTY MEDICAL SOCIETIES

The second meeting of the Maternal Welfare Committee of the Illinois State Medical Society was held January 9, at the Palmer House, Chicago, Illinois. The meeting was attended by the following members: Doctors Joseph T. O'Neill of Ottawa, Phebe L. Pearsall of Moline, R. R. Loar of Bloomington, Milton E. Bitter of Quincy, Walter D. Murfin of Decatur, O. H. Crist of Danville, Henry G. Horstman of Murphysboro, T. B. Williamson of Mount Vernon, John F. Carey of Joliet, Frederick H. Falls and Harold H. Hill of Chicago, James H. Hutton, Acting Chairman of the Educational Committee, Harold M. Camp and Miss Jean McArthur.

Dr. Williamson, chairman urged prompt action in selecting county groups in order that the entire state may become organized. This is necessary for the success of the movement. Dr. Williamson emphasized the fact that organized medicine was behind the movement and as the protector of the individual rights of the physician, deserved the fullest cooperation of every medical group.

So much unreliable criticism of the medical profession has been published in lay magazines that a study of the causes and correction of maternal, fetal and early infant mortality should be conducted by the medical profession and all local problems should be handled by a local group. The problem is one for each and every practitioner of medicine.

Dr. Hill spoke of the progress of the "refresher" courses held in several counties and the post-graduate courses in obstetrics to be offered this summer at the State University.

PLATFORM FOR COUNTY MEDICAL SOCIETIES ADOPTED

A platform was adopted, copies of which are to be sent to each county medical society and each Assistant Committeeman.

1. More emphasis should be placed on adequate prenatal care.
2. Greater attention should be given to eugenics rather than to birth control.

3. Every county medical society should include in its post-graduate instructions for doctors "refresher" courses in obstetrics.

4. The study of maternal deaths should be continued to determine preventability, with a committee meeting regularly.

5. A physicians' speaker's service should be organized for lay groups in each county.

6. In each county of the state a large public meeting should be held to bring to the attention of everyone the need for saving the lives of mothers and babies.

7. Greater emphasis should be placed on the value of a routine Wassermann test for syphilis for every prospective mother immediately after a diagnosis for pregnancy is made.

8. The interest of women should be secured, particularly such group as the women's auxiliary of the county medical society.

The next meeting of the Committee is scheduled for April 10, 1938, at the Palmer House, Chicago, Illinois.

T. B. WILLIAMSON,
Chairman, Mount Vernon, Illinois.
JOHN FLACEY,
Secretary, Joliet, Illinois.

THE CRONIN BROADCAST

To the Editor: I have just read the address of Doctor A. J. Cronin which was broadcast over the Broadcasting System to this country and England, December 14, 1937. His subject was "Adequate Medical Care for All." Perhaps you read it, as it was sent out by the Speakers Service Bulletin No. 10 from New York State Medical Society.

I am calling your attention to it not from the standpoint of what it is, but from what it is not as related to his subject. He points no way to the thing he has talked about. He tells two short stories about two young couples being reduced to discouragement from financial loss as a result of illness, which leaves the impression that it was due to the cost of medical service. This type of story has an appeal at a time like this. The story may be true in part to some expense for medical service, but if wholly true the application in my opinion is grossly wrong as financial loss can and does come from many sources so why so terrible when due to illness? Why has the cost of sickness become such a shocking crime? All about us are costs, even

our own government charges us more for nothing than the whole medical cost of our nation. The amount the medical profession is beat out of that people might pay their liquor bills would go a long way in preventing such cases. In other words; it is a poor story for a doctor to tell in relation to the subject he chooses to speak on.

As to progress in medical science and medical service, this has never ceased, where the profession was left unhampered by government control. There always will be progress in medical service if medical minds are left to honor and love their professions.

Now why this letter? For this reason: I know our JOURNAL has an Exchange with the New York and that some comment might be in order on this address. If Doctor Cronin has something to offer constructive, we want it. We still lay undisputed claim to the healthiest people in the world, due to a medical science and service unexcelled, and yet in progress of a still better service for tomorrow if left to the medical profession.

Give our people a chance to work and lessen the cost of government and our profession will care for the sick and our patients will take care of their doctors. Let the government give what the administration cost of federal controlled medicine would be to those who are sick and that would pay the physician and save the government the cost of medical service.

CHARLES S. SKAGGS, M. D.

ANNUAL DUES ARE LOW IN COMPARISON WITH STATE SOCIETY NECESSARY ACTIVITIES

At the January meeting of the council of the Illinois State Medical Society the secretary of the society reported on the dues and activities of other state medical societies as follows:

We recently had the opportunity to review a report of activities of the various state medical societies, and the amount of the annual dues to be assessed against their respective memberships during 1938. In the 40 state societies reporting we find that the lowest of the annual dues is found in Alabama where they pay \$3.00 per annum. Their activities on this small sum are very limited. Among the larger societies we find that California, Massachusetts, New York, and Pennsylvania have annual dues of \$10.00.

Four societies have annual dues of \$15.00, and one of these, Wisconsin, will have a special assessment of \$10.00 for 1938 for the purpose of "studying the distribution of medical care." In summarizing the annual dues of 40 of the state medical societies we find that:

7 have annual dues of	\$ 5.00
4 have annual dues of	6.00
2 have annual dues of	7.00
4 have annual dues of	8.00
1 has annual dues of	9.00
(With special assessment predicted for 1938)	
11 have annual dues of	10.00
2 have annual dues of	12.00
1 has annual dues of	12.50
1 has annual dues of	14.00
4 have annual dues of	15.00

The county medical society dues vary from 25c above the state society per capita assessment to \$50.00, with quite a number of societies varying from \$20.00 to \$25.00.

In presenting this information to the Council, it is our desire to have it made a matter of record, and available to each of you when it is desired. We find that 13 of these societies will have a special assessment during 1938 for various purposes such as "to fight cult legislation," "to fight anti-vivisection," "to increase legislative activities," "basic science bill," "educational purposes," "Publicity campaigns," "to pay running expenses."

A CONGRESSIONAL APPROPRIATION DIVERTED TO BUILD UP A DENTAL AND MEDICAL CLINIC

The Home Owners Loan Corporation recently took \$40,000 of money given it by Congress to build and repair homes and used it, instead, to set up a dental and medical clinic for its clerks in the Washington office. The clerks get the \$40,000, rather than the home owners.

EDUCATIONAL COMMITTEE

January 1938

SPEAKERS BUREAU

60—Speaking engagements were filled by members of the Illinois State Medical Society before lay groups in the following communities:

La Grange	Peoria
Normal	Maywood
Beardstown	Atlanta
Chicago	Pana
Ottawa	Westchester
Arcola	Shabbona

Wayne	Barrington
Mazon	Aurora
Melrose Park	St. Charles
Kankakee	Elgin
Rock Island	East St. Louis
Sandwich	Springfield
Freeport	Lincoln

Excellent reports were received on many of these programs indicating that the public expects information from the medical profession concerning socialized medicine, and other subjects of interest today.

RADIO

16—Radio programs were given during the month. Many of these were in the form of dialogue.

Five hundred radio announcements were sent out to organizations in the state giving the programs for the month.

PRESS REPORT

20—Monthly health columns to newspapers.

301—Health articles to Illinois newspapers.

101—Health articles to Chicago papers.

456—Editorial Style articles to papers.

332—Copies of educational health articles to libraries.

168—Copies of educational health articles to Chicago libraries.

732—Copies of educational health articles to Home Advisers, Health Chairmen, Teachers, Mayors, etc.

Articles written and approved on the following topics:

Can You Prove That You Were Born.

Winter Time Care of the Skin.

A Fifty Year Club.

How Do You Sleep?

Maternal Welfare.

Frostbite.

Budget Your Health Resources.

Common Questions Concerning the Eyes.

21—Newspaper notices sent for Henry County Medical Society.

35—Newspaper notices sent for Jefferson-Hamilton Medical Society.

4—Newspaper notices sent for North Shore Branch.

4—Newspaper notices sent for Chicago Medical Society.

AID TO COUNTY MEDICAL SOCIETIES

137—Notices sent to doctors about Perry County Meeting.

97—Notices sent to doctors about Bureau County Meeting.

101—Notices sent to doctors about Effingham County Meeting.

288—Notices sent to doctors about Henry County Meeting.

102—Notices sent to doctors about Jefferson-Hamilton County Meeting.

SCIENTIFIC SERVICE

24—Programs arranged as follows:

PEORIA CITY MEDICAL SOCIETY

Dr. Abraham F. Lash—"Puerperal Sepsis."

PEORIA CITY MEDICAL SOCIETY

Dr. Frank L. Rector—"Cancer."

SCOTT COUNTY MEDICAL SOCIETY—Iowa

Dr. Disraeli Kobak—"Physical Therapy."

VERMILION COUNTY MEDICAL SOCIETY

Mr. J. W. Rawlins—"Malpractice Suits."

VERMILION COUNTY MEDICAL SOCIETY

Dr. J. R. Ballinger—"Malpractice."

WILL-GRUNDY COUNTY MEDICAL SOCIETY

Dr. Philip Lewin—"Low Back Pain and the Sciatic Syndrome."

PERRY COUNTY MEDICAL SOCIETY

Dr. Isadore M. Trace—"Treatment of Pneumonia."

LA SALLE COUNTY MEDICAL SOCIETY

Dr. Frank L. Rector—"The Cancer Problem."

LA SALLE COUNTY MEDICAL SOCIETY

Dr. R. T. Pettit—"Cancer of the Breast. Diagnosis and Treatment."

MEDICAL AND DENTAL SOCIETIES—BURLINGTON, IOWA

Dr. Harold M. Camp—"Our Mutual Problems and a Cooperative Program."

EFFINGHAM COUNTY MEDICAL SOCIETY

Dr. Robert S. McCaughey—"Pneumonia."

WILL-GRUNDY COUNTY MEDICAL SOCIETY

Dr. M. Herbert Barker—"Hypertension and Its Treatment."

FORT WAYNE MEDICAL SOCIETY—FORT WAYNE, INDIANA

Dr. Robert S. Berghoff—"Heart Lecture."

ROCK ISLAND COUNTY

Dr. Harold M. Camp—"Relationship between Dentists and Doctors."

WILL-GRUNDY COUNTY MEDICAL SOCIETY

Dr. Cleveland J. White—"Ringworm."

DU PAGE COUNTY MEDICAL SOCIETY

Dr. C. G. Weller—"The Present Attitude in Diagnosis and Treatment of Ureteral Calculi."

IROQUOIS-FORD COUNTY MEDICAL SOCIETY

Dr. M. E. Davis—"The Management of Prolonged Labor."

MARION COUNTY MEDICAL SOCIETY

Dr. Andy Hall—Presentation of 50 year buttons to Dr. Murfin and Dr. Richardson.

WILL-GRUNDY COUNTY MEDICAL SOCIETY

Dr. Jerome R. Head—"Early Diagnosis of Pulmonary Tuberculosis."

CHRISTIAN COUNTY MEDICAL SOCIETY

Dr. George B. Stericker—"Pneumonia."

JEFFERSON-HAMILTON-WAYNE-FRANKLIN-SALINE COUNTY MEDICAL SOCIETIES

Dr. H. Close Hesseltine—"The Management of Puerperal Sepsis."

JEFFERSON-HAMILTON-WAYNE, FRANKLIN AND SALINE COUNTIES

Dr. Ralph A. Reis—"Difficulties of Obstetrical Diagnosis."

JEFFERSON-HAMILTON COUNTY MEDICAL SOCIETIES

Dr. Eustace Benjamin—"Pneumonia."

Dr. George F. O'Brien—"Pneumonia."

SPECIAL WORK ON OBSTETRIC AND PEDIATRIC PROGRAMS

FORD-IROQUOIS COUNTY MEDICAL SOCIETIES—4 meetings planned, Odd Fellows Hall, Watseka, Illinois.

January 20th meeting—148 notices mailed to doctors, 63 press notices (Illinois and Indiana papers and doctors).

JASPER-CRAWFORD-LAWRENCE COUNTIES Woodworth Hotel, Lawrenceville, Ill.

January 18th meeting—102 notices, 34 press reports.

COLES-CUMBERLAND COUNTY MEDICAL SOCIETY—U. S. Grant Hotel, Mattoon.

January 6th meeting—114 notices, 31 news releases.

HANCOCK COUNTY MEDICAL SOCIETY—Carthage Hotel, Carthage, Illinois.

January 10th meeting—106 notices sent to doctors, 30 news releases sent to newspapers.

JEFFERSON-HAMILTON, WAYNE, FRANKLIN AND SALINE COUNTIES.

January 27th meeting—Community Building, Benton, Illinois. 134 notices sent to doctors, 33 news releases sent to newspapers.

UNION-PERRY-JACKSON COUNTY SOCIETIES—Anna Hotel, Anna, Illinois.

January 13th meeting—235 notices sent to doctors, 22 news releases sent to newspapers.

NEW ACTIVITIES

The Committee has prepared a list of prominent people of the state and is sending them articles relating to the medical profession. Two articles have been sent to date, a reprint of an article from the Nation's Business and from a talk given by Doctor Fishbein before a Minnesota audience.

CONTACTS WITH LAY ORGANIZATIONS

The Summer Round-Up Chairmen of the Chicago districts of the Illinois Congress of Parents and Teachers held a conference in Chicago on January 28th. Doctor Gerald Cline represented the Educational Committee and spoke on the importance of the campaign and cooperation with organized medicine. More than 100 chairmen attended this meeting.

The Committee furnished a speaker for the January program of the Health Chairmen of the Illinois Federation of Women's Clubs.

Letters were sent to principals of Illinois High Schools offering to furnish short cancer programs for the student assemblies or science classes. Many replies have been received by the Committee and programs will be given in all sections of the state by representatives of the Illinois State Medical Society.

MARSHALL FIELD ANNEX WINDOW

The January window was on the importance of the periodic health examination. The February window will be a LINCOLN exhibit.

JEAN McARTHUR, Secretary.

WOMAN'S AUXILIARY TO THE ILLINOIS STATE MEDICAL SOCIETY

The Board of the Woman's Auxiliary to the Illinois State Medical Society met November 20 at the Palmer House in Chicago.

Mrs. Augustus Kech, National President of the Woman's Auxiliary to the American Medical Society, spoke inspiringly to those present.

The Board will meet again January 29.

PUBLIC RELATIONS

How can we serve the community in which we live if we are not adequately informed on what that community needs?

The Public Relations committee acts as a liaison between the Medical Society and the public.

Our contacts as Auxiliary members with lay groups are most important.

It is suggested that we serve on health committees wherever possible.

We must protect the public health, study communal health needs, see that they are correctly informed on health measures, suggesting speakers for their programs from the Medical Society, exposing pseudo-health measures and bringing information on legislative matters that would jeopardize the public health.

Stress Socialized Medicine, offer prizes to local high schools for essay on it. Suggest Panel discussion, have a doctor as one of the speakers.

All counties sponsoring laity programs having a speaker who can give an interesting talk on either a medical topic or one of import to health legislation, will accomplish a great deal towards bringing the aims and ideals of the Auxiliary to fruition.

We must encourage listening to the A. M. A. Health Programs broadcast over NBC each Wednesday at 2 P. M., E.S.T.

As a member, keep informed, read *Hygeia*, *Illinois Health Messenger*, *Auxiliary News* and *National News Letter*.

"MRS. CHARLES" CELIA G. SEGAL,
State Public Relations.

HYGEIA

There is to be another *Hygeia* contest this year, which will run from Dec. 1, 1937 to Jan. 31, 1938. There will be \$150.00 in prize money awarded. This group will be divided into three groups.

Group 1, Auxiliaries with a membership of 1-49.....	\$50.00
Group 2, Auxiliaries with a membership of 50-199.....	\$50.00
Group 3, Auxiliaries with a membership of over 200....	\$50.00

Each group prize awarded will be based on the quota and the number of subscriptions secured. The quota for each county is the number of paid up members at the close of the fiscal year 1936.

Last year a county from Illinois won one of the prizes. This year, if every woman who is an auxiliary member will become a subscriber, Illinois might very easily win all three groups. Each of us should take this as an individual responsibility as *Hygeia* is one of the chief activities of the auxiliary. Much is expected of us as Illinois is the home of *Hygeia*.

Let us remind you that *Hygeia* makes an excellent gift. Doctors may subscribe through their auxiliaries.

Special prices can be quoted to physicians who are members.

(Mrs. A. F.) ESTELLA WEST GAREISS,
State Hygeia Chairman.

ILLINOIS MARRIAGE LICENSES OFF FIFTY PER CENT

A recent release from the State Department of Health says:

Presumably the result of the Saltiel law requiring prenuptial medical examinations, the number of marriage licenses issued in 94 downstate counties declined 74% during the last half of 1937 compared with that period of 1936. For the last 7 months of 1937, which includes the June rush, the decline was 55%. In Cook County the reduction was only 49% for the last half and 19% for the last seven months. Whether or not the marriage rate among Illinois inhabitants has declined is not known. Many couples have gone to neighboring States, where legal restrictions are less rigid, to be married.

Licenses issued in some of the border counties were off by more than 95% while in such centrally located counties as Macon, Peoria and Sangamon, the decline was 45%, 43% and 45%, respectively, with the June figures included. In July the number of licenses issued in all downstate (94 counties) dropped 88% below that month of 1937, was only 76% in August and was 68%, 71%, 69% and 73%, below, respectively, for each succeeding month of 1937.

Inconvenience and the cost of the medical examinations seem to be more important deterrents to marriage in the State than opposition to the principles of the law. County clerks are practically unanimous in the opinion that the law which requires a three-day notice of intent to marry is superfluous since the Saltiel law requires a medical examination within 15 days prior to marriage and that the former has caused much confusion and added substantially to the decline in marriage licenses. Most county clerks have a favorable attitude toward the Saltiel law but think it impractical unless made national in scope or at least extended to all neighboring States. Practically no opposition to the law has been expressed publicly but the statistics on marriage licenses show that a majority of downstate people wishing to marry have thus far been unwilling for one reason or another to comply with its provisions.

From the standpoint of detecting venereal infections the law appears to have justified itself fully. During the first 6 months after it became effective there were submitted to the State diagnostic laboratories 30,298 blood specimens for testing for compliance with the law. Of these 479, or 1.5 per cent, were positive for syphilis. Discovery of syphilitic infection prior to marriage is considered good public health practice if it results in appropriate treatment and postponement of marriage until the danger of spreading the disease is over.

During the same 6 months 14,412 specimens for prenuptial purposes were submitted to the State diagnostic laboratories for tests for gonococci and of these 116 or 0.8% were positive. Many physicians make their own

tests for gonococci, accounting for the discrepancy in the number of specimens submitted for the two tests.

PROTAMINE ZINC INSULIN SQUIBB

Physicians will be interested to know that Protamine Zinc Insulin Squibb is now available in two strengths, 10 cc. vials of 40 units per cc. and 10 cc. vials of 80 units per cc.

Protamine Zinc Insulin has been available in the 40-unit strength since February 1, 1937. It was felt, however, that a higher potency was also needed for the many diabetics who require large amounts of Insulin daily.

While the efficiency of the two strengths of Protamine Zinc Insulin may be identical, the transfer of a patient from one strength to the other should be made only under the careful supervision of a physician until more experience has been accumulated.

Protamine Zinc Insulin Squibb is marketed under license from the Insulin Committee, University of Toronto.

BIRCHWOOD PARK SANITARIUM

Ralph B. Mitchell, Zion, was elected vice-president of the Birchwood Park Sanitarium, Howard and Western, at the annual meeting of the board of directors, Thursday, January 13. He succeeds Arthur T. Meeker, Chicago. All other officers and directors were re-elected.

Officers and directors are: Edgar B. Baumann, Winnetka, president; William A. Fox, Glencoe, secretary; Ralph W. Olmstead, Chicago, treasurer; Paul B. Kelly, Kenilworth, auditor; and Dr. Ethan A. Gray, Greenwood Inn, Evanston; Henry J. Patten, Deerpath Inn, Lake Forest; Dr. Herbert W. Gray, Roselle; and Mr. Meeker and Mr. Mitchell.

While the Sanitarium operated at a small loss, as is customary, the new budget provides for converting a large ward on the second floor into a combined library and recreation room. A committee of directors was also appointed to report on the advisability of increasing the board of directors from nine to twelve and changing the term of election.

AMERICAN ASSOCIATION OF OBSTETRICIANS, GYNECOLOGISTS AND ABDOMINAL SURGEONS

Rules Governing the Award of "The Foundation Prize"

1. "The award which shall be known as 'The Foundation Prize' shall consist of \$500.00."

2. "Eligible contestants shall include only (a) interns, residents, or graduate students in Obstetrics, Gynecology or Abdominal Surgery, and (b) physicians (with an M. D. degree) who are actively practicing or teaching Obstetrics, Gynecology or Abdominal surgery."

3. "Manuscripts must be presented under a nom-de-plume, which shall in no way indicate the author's identity, to the Secretary of the Association together with a sealed envelope bearing the nom-de-plume and

containing a card showing the name and address of the contestant."

4. "Manuscripts must be limited to 5000 words, and must be typewritten in double-spacing on one side of the sheet. Ample margins should be provided. Illustrations should be limited to such as are required for a clear exposition of the thesis."

5. "The successful thesis shall become the property of the Association, but this provision shall in no way interfere with publication of the communication in the Journal of the Author's choice. Unsuccessful contributions will be returned promptly to their authors."

6. "All manuscripts entered in a given year must be in the hands of the Secretary before June 1st."

7. "The award will be made at the Annual Meetings of the Association, at which time the successful contestant must appear in person to present his contribution as a part of the regular scientific program, in conformity with the rules of the Association. The successful contestant must meet all expenses incident to this presentation."

8. "The President of the Association shall annually appoint a Committee on Award, which, under its own regulations shall determine the successful contestant and shall inform the Secretary of his name and address at least two weeks before the annual meeting."

JAS. R. BLOSS, M. D.,
Secretary,

418 Eleventh Street, Huntington, W. Va.

ILLINOIS PHARMACEUTICAL ASSOCIATION OPPOSES SOCIALIZED MEDICINE

At the recent Executive Board Meeting of the Illinois Pharmaceutical Association the following resolution was presented and passed and a recommendation made that a copy of this resolution be sent to your organization:

WHEREAS there is a movement on foot to popularize and foster State or Socialized Medicine in the United States, and

WHEREAS the Illinois Pharmaceutical Association is firmly of the opinion and belief that such movement is detrimental to the welfare of the medical, pharmaceutical and other allied professions and inimical to the public interest,

NOW, THEREFORE, *It Is Hereby Resolved*, that the Illinois Pharmaceutical Association places itself on record as being opposed (a) to State or Socialized Medicine, (b) to the movement of fostering same in the United States, (c) to the provision of funds for the National Government for the furnishing of medical treatment, and (d) to the movement recently started in the State of New York urging Congress to do so.

And, It Is Hereby Further Resolved, that the Illinois Pharmaceutical Association pledges its full support to and cooperation with the American Medical Association and the Illinois Medical Society in their sincere and unselfish stand against state or Socialized Medicine in the United States and in their combating any movement therefor; and that a copy of the foregoing resolutions be sent to each of said organizations.

THE SHORTAGE OF RADIUM THROUGHOUT THE WORLD

The Editorial Services, Ltd., commenting upon the shortage of radium says: More than double the present supply of radium is needed for treatment of cancer by leading United States hospitals in the East and Middle West, according to hospital authorities interviewed in a regional survey, preliminary findings recently announced this week.

Approximately 82 grams of radium are now held by the 213 hospitals in 47 cities surveyed. About 109 more grams are needed to meet treatment demands, authorities of these hospitals estimated. With radium now priced at about \$25,000 a gram, the present holdings of these hospitals have a market value of approximately \$2,050,000. The additional supply which hospital authorities estimate is needed would cost at present prices about \$2,725,000. Fewer than 100 of the hospitals owned any radium at all.

Many large communities showed either a complete lack of the precious mineral in their hospitals, or a very small supply adequate only for limited use.

The hospitals of such cities as Des Moines, Ia., and Syracuse, N. Y., owned no radium at all. Hospitals in other communities possess in combination very limited amounts, Kansas City hospitals owning a total of about 150 milligrams, Milwaukee hospitals totalling about 240 milligrams, New Haven, Conn., hospitals about 100 milligrams and Rochester, N. Y., 240 milligrams.

Largest single radium holder is Bellevue Hospital of New York City with nine and one-half grams; another New York City hospital, Memorial Hospital, is second with eight and nine-tenths grams. Other hospitals with large radium supply are: State Institute for the Study of Malignant Diseases, Buffalo, N. Y., $8\frac{1}{4}$ grams; Michael Reese Hospital, Chicago, $6\frac{1}{2}$ grams; Howard A. Kelly Hospital, Baltimore, 5 grams; American Oncologic Hospital, Philadelphia, $4\frac{1}{2}$ grams; Hines U. S. Veteran's Hospital, Hines, Ill., 3 grams.

Present commercial sources of radium throughout the world are limited to two—the Eldorado mines in Canada, at Radium City on Great Bear Lake in the Canadian sub-Arctic; and the Belgian Congo mines in Africa. Eldorado, believed to be the greatest producer today, mines and refines about 5 grams a month. (It takes 1,000,000 pounds of the Canadian ore, believed to be the richest in the world, to produce one gram of this rarest of minerals in final form.)

Discovery of the rich Eldorado vein seven years ago brought the price of radium down from \$70,000 a gram to its current level of \$25,000. The total amount of mined radium in the world (produced since its discovery by the Curies in 1898) is generally estimated to be less than one and one-half pounds, or not quite 600 grams, not enough to make a two-inch cube.

Of about 225 grams believed to exist in the United States, the most comprehensive census to date has revealed the whereabouts of only about 100.

New York City holds about 30 grams, valued at \$750,000; Philadelphia about 13 grams; Chicago about 11 grams; Buffalo about 9 grams and Boston about $5\frac{1}{4}$ grams.

NATIONAL EXHIBIT AMERICAN PHYSICIAN'S ART ASSOCIATION

The American Physicians' Art Association, a national organization of medical men who have ability in the fine arts, will hold a *first national exhibition* in the San Francisco Museum of Art, San Francisco, California, in June, 1938. (The American Medical Association Convention is June 13-17 in the same city.) The American Physicians' Art Association already has an outstanding membership. There are three classifications for membership: active, associate and contributing. The *first annual exhibition* promises to be of unusual interest with entries to be accepted (after jury selection) in the following classifications: oils, watercolors, sculpture, photography, pastels, etchings, crayon and pen and ink drawings (including cartoons), wood carvings and book bindings. Scientific medical art work will not be accepted. The exhibition is not limited to first showings. All entries close April 1, 1938. Any physician interested should communicate at once with the Secretary of the American Physicians' Art Association, Suite 521-536 Flood Bldg., San Francisco, California.

INTERNATIONAL CONGRESS FOR THE HISTORY OF MEDICINE

Royal Yugoslav Consulate General in Chicago wishes to inform you that IX. International Congress for the History of Medicine will be held this year in Yugoslavia from September 3-11 at which many world renowned personages in medicine and science and delegates of many countries will participate.

Applications to attend this Congress should be sent to: Dr. Vladimir Bazala, Secretary General of the IX. International Congress for the History of Medicine, 95 Vlaske ulica, Zagreb, Yugoslavia.

Besides prominent Yugoslav medical authorities, many eminent persons in medical science from foreign countries have already applied to address the Congress among them: Tricot-Royer from Antwerp, Belgium; Guiart from Lyons, France; Alksnis from Riga, Latvia; Castigglioni from Padua, Italy; J. D. Rolleston from London; D. A. Silva Carvalho from Lisbon, Portugal; Starkenstein and Vinar from Prague, Czechoslovakia; Zembrunski from Warsaw, Poland; Mme. A. Panayoyatou from Alexandria, Egypt; Martini and Muhlen from Hamburg and Depgen from Berlin, Germany; Suheyl-Ilver and Belger from Istanbul, Turkey; Gomoiu from Bucharest, Roumania; Capparoni from Rome, Italy; Stoyanov from Sofia, Bulgaria; Szumowski from Krakau, Poland and others.

Other applications to address the Congress should be made as soon as possible by cablegram naming the subject to be treated.

The members and delegates will meet on September 3rd at Hotel Esplanade in Zagreb, where the opening of Congress will be inaugurated with festive ceremonies.

Further meetings will be held in Belgrade, the capital of Yugoslavia; in Sarajevo and in Dubrovnik on Adriatic Seacoast.

Applications that have been already accepted for talks before the Congress comprise the following subjects:

Mysticism and Magic in Popular Medicine; Psychogenic Diseases and Psychotherapy; History of Natural Science and Medicine; Medicine in Folklore; History of Pallidinism, etc.

Receptions have been arranged for the members and delegates to the Congress in each city where the meetings will be held with banquets and visits to museums, historical places and picturesque countryside.

Further detailed information may be secured by writing to Dr. Vladimir Bazala, Secretary General, 95 Vlaska ulica, Zagreb, Yugoslavia.

SERUM FOR MEASLES AND SCARLET FEVER

A series of bleeding clinics are to be held shortly at various points in Illinois to obtain convalescents' serum for the control of measles and scarlet fever. Local health officers and hospitals, the Samuel Deutsch Serum Center of Chicago and the State Department of Public Health are cooperating in the venture. One-fifth of the serum collected will be left for free distribution locally in communities where clinics are held. The remainder will be retained by the Samuel Deutsch Serum Center to be sold at the cost of production to any physician who so requests.

Clinics will be held on January 27 at Peoria, February 1 at Hillsboro and February 3 at Quincy. At dates to be announced later, clinics will be held at Moline, Kewanee, Elgin, Alton, Springfield and perhaps several other places.

Healthy persons over fourteen years of age who have recovered recently from measles or scarlet fever are acceptable as donors. Each accepted donor will be paid a fee of \$5 and perhaps a small additional allowance for travel expenses.

Measles convalescents' serum may be of great benefit in controlling measles among young children in whom the disease is not infrequently serious. Given in proper dosage prior to the fifth day after exposure convalescents' serum usually prevents the disease entirely although immunity thus established protects a child for only a short while, two or three weeks. Given in proper dosage between the 5th and 8th days after exposure, convalescents' serum does not prevent but causes the disease to run a mild, uneventful course in most cases. Rosenau recommends 5 cc for children and 10 cc for adults injected intramuscularly. Adult serum in doses of 15 cc to 20 cc and fresh whole blood in double that dosage is effective, according to Rosenau.

Convalescent scarlet fever serum is useful as a prophylactic or for treatment when given early.

Both measles and scarlet fever are widely prevalent throughout the State. The incidence of both is likely to continue relatively high for several weeks.

Although fluctuating widely with epidemic cycles, mortality from measles has averaged about 200 deaths annually in Illinois during the last 12 years and about three-fourths of the fatalities have been among children under 5 years old.

REFRESHER COURSE IN VENEREAL DISEASES

Beginning in February the Graduate Course in Venereal Disease Control, Western Reserve University, will offer a one week refresher course in syphilis. This course will be conducted on the seminar plan with free discussion of problems in diagnosis and treatment of every type of syphilis. Part-time students will be accepted for longer periods.

One formal lecture on the several venereal diseases will be given during the week. The other phases of the subject such as intravenous and intramuscular treatments, darkfield examinations, etc., will be demonstrated.

The course is open without fees to any regularly licensed physician in any state. Further information and a copy of the working schedule can be obtained by addressing George W. Binkley, M.D., 2085 Adelbert Road, S. E., Cleveland, Ohio.

POSTGRADUATE INSTITUTE OF THE PHILADELPHIA COUNTY MEDICAL SOCIETY

The third Annual Postgraduate Institute, offering an intensive and interesting study of the Diseases of the Digestive Tract, will be conducted by The Philadelphia County Medical Society from March 28 to April 1, inclusive.

The program to be held in the Bellevue-Stratford Hotel, Philadelphia, has been designed to meet the needs of all members of the profession, but particularly those in general practice.

Physicians from fourteen States having attended last year's institute, an invitation to attend the 1938 session has been extended to the members of all County Societies.

Lecturers, 73 in number, have been selected from among the foremost teachers in this great medical center. While approaching the subject from specialized viewpoints, the presentations will be of a strictly practical nature and of real value to the general practitioner, who finds digestive conditions occupy a considerable portion of his time.

The Philadelphia County Medical Society, in conducting the Postgraduate Institute, is meeting the demands of many physicians who believe that the organized profession should provide them with this type of opportunity for keeping abreast of medical progress, and thus maintaining the highest standards of medical service.

The only charge is a \$5.00 registration fee to cover the Institute's expenses.

Additional information may be secured from your County Society or from The Philadelphia County Medical Society, 21st and Spruce Streets, Philadelphia, Pa.

NO NECESSITY FOR CIRCULATION OF PETITIONS PRESENTING PROPOSALS FOR CHANGES FOR PAYMENT OF MEDICAL SERVICES

The following statement by the Board of Trustees of the A. M. A. should be widely publicized and thoroughly digested by every physician in America:

The Board of Trustees of the American Medical

Association) has especially authorized the publication of the following statement:

Following the publication of the report of the American Foundation Studies in Government, a small group of physicians, assembled in New York, developed certain principles and proposals which have since been circulated by a self-appointed Committee of Physicians among the medical profession of the United States, with a view to obtaining signatures in their support. During a period of approximately six months, some 430 medical men have apparently permitted the use of their names. Early in November the self-appointed group of physicians released to the press for Sunday, November 7, a statement of principles and proposals to which the names of the 430 signers were affixed. The newspapers generally heralded this action as a revolt against the American Medical Association, in a great majority of the cases indicating that there was a revolt in behalf of "state medicine." The publication of this manifesto and the attached signatures has been heralded with glee by many of those who have been opposing the American Medical Association in behalf of coöperative practice, sickness insurance, and various fundamental changes in the nature of the practice of medicine. Within the last week another series of proposals has come from another self-appointed group requesting signatures of physicians. This series of proposals includes the suggestion for enabling legislation for sickness insurance.[†]

The American Medical Association is an organization of physicians along strictly democratic lines. Representatives of county medical societies send delegates to state medical societies and these, in turn, send their delegates to the House of Delegates of the American Medical Association. It is possible for any physician, through his delegate, to obtain consideration of any proposal which he may wish to bring to the attention of the House of Delegates. At the Atlantic City session the delegates from New York State presented these principles and proposals, slightly modified, as an action of the House of Delegates of the New York State Medical Society. They were carried before a reference committee and, in several sessions of that reference committee, considerable numbers of physicians presented arguments for and against their adoption. The House of Delegates, however, after thorough consideration of the report of the reference committee, and with full cognizance of the method of development of these principles and proposals, and of the considerations which were involved in their passage by the House of Delegates of the New York State Medical Society, did not accept them. The House of Delegates did, however, point out the willingness of the medical profession to do its utmost today, as in the past, to provide adequate medical service for all those unable to pay either in whole or in part.

Why, then, any necessity for the circulation of petitions presenting proposals for fundamental changes in the nature of development, distribution, and payment for medical service? Is there a well-designed plan to impress the executive and legislative branches of our government with the view that the American medical

profession is disorganized, distrustful of its leaders, undemocratic in its action and opposed to the best interests of the people? Who may profit from such evidence of disorganization? Is there any evidence that the self-appointed Committee of Physicians and the 430 physicians who have affixed their names to these principles and proposals are any better able to represent the opinion of the American medical profession than the democratically chosen House of Delegates of the American Medical Association—one of the most truly representative bodies existing in any type of organized activity in this country today?

The House of Delegates has given its mandate to the Board of Trustees, to the officers and to the employees of the Association. That mandate opposes the principles and proposals emanating from the Committee of Physicians, and equally the new proposals. If the House of Delegates sees fit to depart from the principles now established, it will be the duty of the Board of Trustees, the officers and the employees of the American Medical Association to promote such new principles as the House of Delegates may establish. Until, however, the regularly chosen representatives of the 106,000 physicians who constitute the membership of the American Medical Association (now the largest membership in its history) determine, after due consideration, that some fundamental change or revolution in the nature of development, distribution and payment for medical service in the United States is necessary, physicians will do well to abide by the principles which the House of Delegates has established. They will at the same time deprecate any attempts inclined to lead the executive and legislative branches of our government, as well as the people of the United States, into the belief that the American medical profession is disorganized.

Members of the medical profession, locally and in the various states, are ready and willing to consider, with other agencies, ways and means of meeting the problems of providing medical service and diagnostic laboratory facilities for all requiring such services and not able to meet the full cost thereof. The American Medical Association has reaffirmed its willingness on receipt of direct request to cooperate with any governmental or other qualified agency and make available the information, observations and results of investigation, together with any facilities of the Association. Thus far, no call has come from any governmental or other qualified agency, for the coöperation of the American Medical Association in studying the need of all or of any groups of the people for medical service, to determine to what extent any considerable proportion of our public are actually suffering from lack of medical care. The offer still stands as evidence of the willingness of the American Medical Association to aid in finding a solution to any or all of the problems in the field of medical care that now prevail.

DON'T FORGET YOUR INCOME TAX REPORT

The Revenue Act of 1936 amended in numerous respects the prior income tax law, but none of the

changes made relate to physicians as a class distinct from the main body of federal income tax payers.

Every one who is required to make a federal income tax return must do so on or before March 15, unless an extension of time for filing his return has been granted. For cause shown, the collector of internal revenue for the district in which the taxpayer files his return may grant such an extension, on application filed with him by the taxpayer. This application must state fully the causes for the delay. Failure to make a return may subject the taxpayer to a penalty of 25 per cent of the amount of the tax due.

The normal rate of tax on residents of the United States and on all citizens of the United States regardless of their places of residence is 4 per cent on net income in excess of the exemptions and credits.

WHO MUST FILE RETURNS

1. If gross income was less than \$5,000 during 1937, a return must be filed (a) by every unmarried person, and by every married person not living with her husband or his wife, whose net income was \$1,000 or more, and (b) by every married person living with her husband or his wife, whose net income was \$2,500 or more. If the aggregate net income of husband and wife, living together, was \$2,500 or more, each may make a return or the two may unite in a joint return.

2. Returns must be filed by every person whose gross income in 1937 was \$5,000 or more, regardless of the amount of his net income and of his marital status. If the aggregate gross income of husband and wife, living together, was \$5,000 or more, they must file either a joint return or separate returns, regardless of the amounts of their joint or individual net incomes.

If the status of a taxpayer, so far as it affects the personal exemption or credit for dependents, changed during the year, the personal exemption and credit must be apportioned, under rules and regulations prescribed by the Commissioner of Internal Revenue with the approval of the Secretary of the Treasury, in accordance with the number of months before and after such change. For the purpose of such apportionment a fractional part of a month should be disregarded unless it amounts to more than half a month, in which case it is to be considered as a month.

As a matter of courtesy only, blanks for returns are sent to taxpayers by the collectors of internal revenue, without request. Failure to receive a blank does not excuse any one from making a return; the taxpayer should obtain the necessary blank from the local collector of internal revenue.

The following discussion covers only matters relating specifically to physicians. Full information concerning questions of general interest may be obtained from the official return blank and from the collectors of internal revenue.

GROSS AND NET INCOMES: WHAT THEY ARE

Gross Income.—A physician's gross income is the total amount of money received by him during the year for professional services, regardless of the time when the services were rendered for which the money was paid, plus such money as he has received as profits

from investments and speculation and as compensation and profits from other sources.

Net Income.—Certain professional expenses and the expenses of carrying on any enterprise in which the physician may be engaged for gain may be subtracted as "deductions" from the gross income, to determine the net income on which the tax is to be paid. An "exemption" is allowed, the amount depending on the taxpayer's marital status during the tax year as stated before. These matters are fully covered in the instructions on the tax return blanks.

Earned Income.—In computing the normal tax, but not the surtax, there may be subtracted from net income from all sources an amount equal to 10 per cent of the earned net income, except that the amount so subtracted shall in no case exceed 10 per cent of the net income from all sources. Earned income means professional fees, salaries and wages received as compensation for personal services, as distinguished from receipts from other sources.

The first \$3,000 of a physician's net income from all sources may be regarded under the law as earned net income, whether it was or was not in fact earned within the meaning set forth in the preceding paragraph. Net income in excess of \$3,000 may not be claimed as earned unless it in fact comes within that category. No physician may claim as earned net income any income in excess of \$14,000.

DEDUCTIONS FOR PROFESSIONAL EXPENSES

A physician is entitled to deduct all current expenses necessary in carrying on his practice.

A person may elect to report his income on a cash or accrual basis. He may not change the basis, however, without permission of the Commissioner of Internal Revenue. If he reports on a cash basis, he includes his fees or other income when received regardless of when earned; if on an accrual basis, he includes them in the period when the services are rendered and when charges are found to be wholly or partially uncollectible he may deduct them as bad debts in the year when so determined.

The doctors expenses are deductible if incurred in the production of income and are not deductible when they are classified as "personal" or "living."

The following items are deductible: All interest and all taxes (except federal income and surtaxes). The doctor may deduct his office expenses including salaries paid attendants or assistants, rent, telephone service, light, heat, and similar necessary expenses and that portion of his home expenses clearly allocable to the conduct of his practice; medical dues, laboratory expenses, losses by fire and other causes, the cost of supplies, medicines, instruments, medical books and magazines, furniture and other equipment (except the internal revenue department may require that those items with a useful life materially longer than one year, be depreciated during the life instead of written off); the cost of transportation in the pursuit of practice including taxi and bus fares, depreciation on cars, chauffeur's wages, gasoline, oil, repairs, etc.; amounts ex-

pending in railroad fares, hotel accommodations and meals in connection with attending meetings and conventions of medical associations; contributions to educational, religious or charitable institutions limited to 15% of the net taxable income; expense incurred by a physician in defense of a suit for malpractice in his profession, insurance premiums paid for insurance against professional losses are also deductible.

Among items of non-taxable income may be noted:

"The personal exemptions of (a) \$1,000 for a single person or for a married person not living with husband or wife or (b) \$2,500 for a married person living with husband or wife during the entire taxable year; (Married persons, if filing separate returns may divide the exemption as they elect) or (c) \$2,500 for the head of a family, whether married or not.

"The credit of \$400 for "each person (other than husband or wife) under 18 years of age, or incapable of self-support because mentally or physically defective, who received his or her chief support from the taxpayer during the taxable year."

"The credit for net earned income calculated as follows: 10% of the amount of the earned net income but not in excess of 10% of the amount of the net income. Earned income will be considered to be not less than \$3,000 or more than \$14,000 (for normal tax only).

"Amounts received as beneficiary of a life insurance policy, whether in lump sums, in installments or as annuities (with exceptions).

"Amounts received as gifts and money and property acquired by bequest, devise or inheritance.

"In interest on obligations of the United States, territories or political subdivisions thereof and the obligations of certain federal instrumentalities, the interest on whose obligations is guaranteed by the United States (for normal tax only).

"Compensation paid by a state or political subdivision thereof to its officers or employees for services rendered in connection with the exercise of an essential governmental function."

DEPRECIATION ON STOCK AND EQUIPMENT

Equipment comprises property of a more or less permanent nature. It may ultimately wear out, deteriorate or become obsolete, but it is not in the ordinary sense of the word "consumed in the using."

The cost of equipment, for professional use, cannot be deducted as expense in the year acquired. Examples of this class of property are automobiles, office furniture, medical, surgical and laboratory equipment of more or less permanent nature, and instruments and appliances constituting a part of the physician's professional outfit, to be used over a considerable period of time, generally over one year. Books of more or less permanent nature are regarded as equipment and the purchase price is therefore not deductible.

Although the cost of such equipment is not deductible in the year acquired, nevertheless it may be recovered through depreciation deductions taken year by year over its useful life, as described below.

No hard and fast rule can be laid down as to what

part of the cost of equipment is deductible each year as depreciation. The amount depends to some extent on the nature of the property and on the extent and character of its use. The length of its useful life should be the primary consideration. The most that can be done is to suggest certain average or normal rates of depreciation for each of several classes of articles and to leave to the taxpayer the modification of the suggested rates as the circumstances of his particular case may dictate. As fair, normal or average rates of depreciation, the following have been suggested: automobiles, 25 per cent a year; ordinary medical libraries, x-ray equipment, physical therapy equipment, electrical sterilizers, surgical instruments and diagnostic apparatus, 10 per cent a year; office furniture, 5 per cent a year.

The principle governing the determination of all rates of depreciation is that the total amount claimed by the taxpayer as depreciation during the life of the article, plus the salvage value of the article at the end of its useful life, shall not be greater than its purchase price or, if purchased before March 1913, either its fair market value as of that date or its original cost, whichever may be greater. The physician must in good faith use his best judgment and claim only such allowance for depreciation as the facts justify. The estimate of useful life, on which the rate of depreciation is based, should be carefully considered in his individual case.

In a Treasury Decision, approved Feb. 28, 1934, No. 4422, it is held, among other things, that

"The cost to be recovered shall be charged off over the useful life of the property.

"The reasonableness of any claim for depreciation shall be determined on the conditions known to exist at the end of the period for which the return was made.

"Where the cost or other basis of the property has been recovered through depreciation or other allowances, no further deduction for depreciation shall be allowed.

"The burden of proof will rest on the taxpayer to sustain the deduction claimed.

"The deduction for depreciation in respect to any depreciable property for any taxable year shall be limited to such ratable amount as may reasonably be considered necessary to recover during the remaining life of the property the unrecovered cost or other basis."

Oculists who furnish spectacles, etc., may charge as income money received from such sales and deduct as an expense the cost of the article sold. Entries on the physician's account books should in such cases show charges for services separate and apart from charges for spectacles, etc.

FORMER ATTORNEY GENERAL ATTACKS SOCIALIZED MEDICINE

THE FOLLOWING IS REPRODUCED FROM THE ILLINOIS
DENTAL JOURNAL, 1937

Socialized medicine was attacked as a fallacy by Thomas D. Thacher, former solicitor general of the United States, in an address at the annual meeting

of the New York Academy of Medicine at Fifth Avenue and 103rd Street.

Mr. Thacher challenged also the constitutionality of socialized medicine under the proposed system of compulsory health insurance. He added that the states had no power to enforce for such insurance a sliding scale of costs between those in the upper and lower income brackets, or to take the money or property of the rich and give it to the poor. "Generosity in relieving distress is characteristic of our people, and particularly characteristic of your profession," he said. "But we prefer to do our own giving."

Mr. Thacher, who is also chairman of the New York City Charter Revision Commission, said that the fallacy of Socialized medicine was that it would blanket the country without regard to local conditions and individuals.

"To put it concretely," he said, "figures indicating averages for the whole of the United States are made the basis for the universal application of a single remedy without consideration of the local conditions under which it is applied. This is a peculiarly erroneous method of thought, and an extraordinary dangerous method of action."

Mr. Thacher pointed out that even the majority on the Committee on the costs of Medical Care did not favor attempting to impose upon the country or upon any community, a preconceived plan for the reorganization of medical service. On the contrary, he said, it pointed out the needs of the profession and of the people, which should be met in a process of evolution by which the profession could more effectively serve the people and be more adequately paid.

Mr. Thacher said that if the plan was to be compulsory it must have force of law and in that event might be authorized only by state legislation. "Ordinarily," he continued, "a state legislature will and must have regard for local conditions and local institutions. If, however, the Federal government, following the pattern of the Social Security Act, should provide Federal appropriations in aid of compulsory health insurance, provided for under state statute, then pressure upon the legislatures of the states to set up such systems at the cost of the Federal government might very well result in such enactments without due consideration of the local institutions and the local needs."

"Serious question would certainly be raised as to the constitutional validity of such laws if they are made compulsory and if there is discrimination in the cost of such insurance as between those in the upper and those in the lower income brackets," Mr. Thacher said. "It is a great temptation to be charitable with other people's money, but the Constitution denies that privilege to the Legislature, although this limitation may sometimes be avoided through an exercise of the taxing power."

Mr. Thacher pointed out that the services of all the great hospitals, dispensaries, clinics, health stations and maternity centers, with all their equipment and technique, were available to the poor of the city. In addition, he said, W.P.A. workers and those on relief got medical and nursing care free. He said the prob-

lems in the South, where 5,000,000 persons live beyond the reach of medical and nursing care, were economic, and he contrasted this with the problems in New York City, adding that "such problems will not be solved by preconceived plans predicted upon statistics and average drawn from all over the United States."

FREE HOSPITAL SERVICE AND VOTES FOR POLITICIANS

The A.M.A. regular Paris correspondent under date of September 11, 1937, has the following to say of the medico-political trend in France:

"There is a constantly growing wave of complaint against the extension of free hospital care to those well able to pay for it. At first this abuse was chiefly confined to the larger cities of France, but there is abundant evidence to show that it is assuming huge proportions in villages. Quite often well-to-do patients are sent to the nearest public hospitals as free patients by the mayors or aldermen of smaller communities in order to obtain votes at subsequent elections. A number of examples of such abuses have recently been published in the *Concours médical*, which journal advises practitioners to file protests through their local societies. Until recently, only medical men in larger cities were affected and the country practitioner thought himself immune, but it is now his turn to feel the inroads on his income by this wave of socialization of medicine in France, which has reached alarming proportions."

GOVERNMENT NEVER CREATES A GENIUS

It is said that in one country, where the government controls the practice of medicine, there are 36,000 panel physicians and 32,000 clerks (politicians) to look after them. That's one trouble with government control—too few producers and too many clerks!

We have no quarrel with those who believe that the indigent should have the advantage of competent medical care. Their right to medical care and hospitalization is evident.

Freedom to select one's physician or surgeon has always been the inherent right of American citizenship. Under the American system the public health has been secure, and the profession of medicine has made tremendous progress.

The arts and sciences cannot be regimented. When government steps in, the incentive to creative progress dies. Government never creates a genius.

There are still great discoveries for the alleviation of suffering and the conservation of human life waiting to be made.

State medicine, controlled by political influence, will never produce a Lister, a Pasteur, a Harvey, a Curie, a Morton, or a Long.

We still have faith in the American system as it applies to the profession of medicine. We have faith that Congress will know that it has a mandate from the American people that State Medicine "cannot happen here."—Patchwork.

Original Articles

CORRELATION OF SECRETARIAL DUTIES IN THE STATE MEDICAL SOCIETY

HAROLD M. CAMP, M. D.

Secretary, Illinois State Medical Society

MONMOUTH, ILL.

In selecting this subject, it is my desire to call to the attention of all secretaries the necessity of a cooperative program on the part of the component medical societies throughout the state, and also of the Illinois State Medical Society. Realizing again that the county medical societies are the basic units of our modern medical organizations, it is quite obvious that the work of the State Medical Society is dependent on the actions of the many component units.

There has never been a time in the history of our medical societies when it was more necessary that we work together constantly for the best interests of the medical profession of Illinois than today. It has been stated many times in recent years that if every physician in this country was an active member of his county medical society, we would have little occasion to fear the enforcement upon us of some system of subsidized medical practice.

We use the term "active member" advisedly, for unfortunately all members of our county medical societies are not actually active in the work of their society. As a chain is no stronger than its weakest link, we might truthfully say that a county medical society is no stronger than its weakest members, for today more than ever before, we need not only 100% membership, but also 100% activity in our societies.

The work in the office of the Secretary of the State Medical Society necessitates constant contact with all component societies, and complete cooperation at all times if we hope to be successful in our endeavors. County Medical societies should not be considered weak or strong in the proportion to the membership, for some of the best societies in this, and all other states, are those with only a few members.

We have in mind a county medical society in a county with only six practicing physicians, and five of them active members of their society. Formerly this county had ten or a dozen physi-

cians, and in the by-laws seven members constituted a quorum. In recent years it was impossible to have a quorum at the meetings, and it required a special order from the Council of the State Medical Society, and the presence of the Councilor for that District to amend the by-laws so that the meetings could be made legal.

The duties of our secretaries, both in the county and state societies, have multiplied enormously during the past few years, with the ever increasing demands for some new type of service. Among these we can mention Federal and State requests for programs for providing medical care for unemployed indigents, injured W. P. A. and other Governmental Agency workers, and more recently, the request for a plan to provide medical care to clients of the Rural Resettlement Administration. Cooperation of county medical societies and their members in the country wide program for the eradication of syphilis has also consumed a considerable amount of our time.

Whenever requests for these unusual services have been made of our societies, they have invariably cooperated in a most commendable manner.

We have at this time, 90 component county societies in Illinois, which means that the office of the Secretary of the Illinois State Medical Society must keep individual records of the membership of each of these units. In the State Society Secretary's office we use a master card for each county medical society, and when a remittance is received, it is promptly credited on individual membership cards to those members designated to receive the credit by the county society secretary. We are compelled to show a credit for each year of membership of every member, and frequently when a component society secretary issues a membership card and receipt to a member who is delinquent for one or more years on our records, it naturally causes a discrepancy in our respective records of that member.

The House of Delegates and the Council during the past four years, have recommended that this ruling be waived only in deserving cases where members have suffered a loss which makes it impossible for them to clear up the delinquency, and where there is a reasonable assurance that they will continue the membership and pay their per capita assessment promptly in

succeeding years. This ruling has necessitated the clerical force in our office making an investigation in every case where the secretary recommends that the usual ruling be waived. Dues in the Illinois State Medical Society are lower than in any of the larger state medical societies in the country, and many of the smaller societies assess each member from two to three times as much each year as we are paying in Illinois.

The By-Laws of this Society specify certain conditions under which members may receive Emeritus Membership with all benefits of active membership, but without paying the annual assessment. These members must have attained the age of 70, and their membership in the Illinois State Medical Society must have extended continuously over a period of 35 years. A few exceptions have been made to this ruling in the cases of elderly members who could not actually qualify for Emeritus Membership, but who are physically disabled and unable to engage in their regular work.

A considerable amount of confusion has arisen in the past when members have moved from a county, or perhaps have died, and this information has not been promptly reported to our office. Occasionally a member pays his annual assessment early in the year, and dies within a short time. With a credit for that year, we retain his name on the membership roster in accordance with the By-Laws until the last day of December in the following year. When the death is not reported, we may receive no information relative to the death of this member until nearly two years have elapsed.

We have had one or two societies remitting \$7.00 for each member to the present time even though the dues have been \$5.00 for the past three years. This oversight, or as we might term it, "over generosity" has been reported to the society repeatedly, and has only recently been straightened out.

Every member of the Illinois State Medical Society is entitled to receive the ILLINOIS MEDICAL JOURNAL each month, but occasionally a secretary informs us that a member, entitled to the JOURNAL, has not received it for more than a year. When any member fails to receive a single copy of the JOURNAL, this should be promptly reported to our office, and we will see that this error is corrected immediately. The JOURNAL uses an automatic addressing machine

which has a slug with the name and address of each member. Occasionally a slug is thrown out of the machine, and we have no knowledge of this until the complaint is sent in to us.

It has been our practice during the past year with the consent of the Council, to send a return postage paid envelope for special information desired from county medical societies. Even though there is no expense assessed to the secretary for postage, we occasionally fail to receive the desired information until additional letters are sent requesting this information. Many times the failure to submit information requested, holds up the releasing of an important report, and this naturally causes confusion elsewhere.

When questionnaires are sent to component society secretaries, they are sent at the request of some committee, the Council, or occasionally as the result of a request received from the American Medical Association. These questionnaires should be returned as soon as possible so that we may refer the desired information to the individuals requesting it.

Another source of confusion arises occasionally when a member moves from a county and the removal is not reported to us. The member applies for admission to the county society where he now resides, is accepted, and then reported to this office as a new member. A new card is made out for this member in the new location, and for several months we may have duplicate cards in two county societies for the same member. We must depend on the secretaries to report removals of members promptly, and not wait until the annual membership report is submitted to give us this information.

Although the county medical society is the sole judge of the qualification of its members, great care should be taken when recent additions to the profession in the county desire to become members. Many times statements of the prospective member relative to past membership in other societies are accepted without investigation, and later the society learns that their judgment in the action taken was an erroneous one. It is easier to keep a questionable or unethical practitioner out of the society than it is to kick him out after he has become a member.

Again we desire to call to the attention of all secretaries that in any questionable cases, you have access to the biographic files of the Amer-

ican Medical Association where complete information relative to the actions of all physicians in the United States is filed. Many time information concerning the past behavior of prospective members can be obtained from these files which will enable the board of censors to more wisely render their report to the County Society.

We would urge the county society secretaries to report as early as possible, all new members admitted to the society, not even waiting until a number of remittances are received, so that they may be sent in for the proper credit. The total membership count in our state society varies each week, and in order that we may have available at all times, an accurate count, this information will be of much service.

It is not our intention to present this short paper as one made up largely of complaints, but to stress particularly the necessity for a general cooperative program to enable both the state and the county medical society to work together in complete harmony.

It is the county medical society secretary who is largely responsible for the holding of successful meetings. He usually arranges the programs, sends out all announcements, and is expected to get the members out to the meetings. If the program is not satisfactory, he usually gets the blame, while if the meeting is thoroughly enjoyed, he does not care for the credit at all.

The ILLINOIS MEDICAL JOURNAL in February, 1922, published an interesting article entitled, "How to Kill a Medical Society" which we believe is worth repeating fifteen years later.

1. Don't come to the meetings. If you do come late.

2. If the weather doesn't suit you, don't think of coming.

3. If you attend a meeting, find fault with the work of the officers and other members.

4. Never accept office, as it is easier to criticize than to do things. Nevertheless, get sore if you are not appointed to a committee; but if you are, do not attend the committee meetings.

5. If asked by the chairman to give your opinion regarding some important matter, tell him you have nothing to say.

6. After the meeting, tell everyone how things ought to be done.

7. Do nothing more than is absolutely necessary, but when other members roll up their

sleeves and willingly and unselfishly use their ability to help matters along, howl that the organization is run by a clique.

8. Hold back your dues as long as possible; or don't pay at all.

9. Don't bother about getting new members; let George do it.

It is my opinion that the above should be typed in large letters and posted in the meeting places where all members will see it. If this is done, we would also recommend that a 1937 postscript be added to the above pertaining to the satisfactory operation of a medical society through proper participation of all members:

1. Attend all meetings regularly.

2. Take your turn in preparing and developing the programs.

3. Aid in getting all eligible non-members into your Society.

4. Make talks when invited to do so before your Society and participate in the discussions at the meetings.

5. Make talks before various lay groups to do your part in the general educational campaign of organized medicine.

6. Treat your fellow physicians as you would have them treat you, and remember you are fellow human beings.

7. Avoid all insinuations in your office or in the homes where you see patients that may be construed in any way as being detrimental to a fellow practitioner.

(Recent studies of 1,500 mal-practice suits filed against physicians show that approximately 50% of them develop as a result of statements made by another physician.)

8. Pay your dues promptly, and always be a booster for your,

COUNTY MEDICAL SOCIETY

Today we see a rapidly changing world. Conditions have developed which would have been considered impossible twenty years ago. With the labor disturbances, political demands, proposals to change our form of Government, and with an ever increasing number of adherents to Communism, we must be ever alert to avoid eventual catastrophe. H. G. Wells some years ago made the statement, "We must have education, or we will have catastrophe." Contrary to the opinion of many who read this statement, Wells referred to the education of adults, and

net of the younger generations in our public schools.

In our educational considerations, the campaign for the education of adults as well as the youth of America in health matters, is of utmost importance. Medical Societies and medically trained individuals must be leaders in all health considerations, and a complete uniformity of ideas and ideals is essential if we hope to be successful in our endeavors.

The county medical society, although the basic unit of our medical organization, needs the guidance of the parent organizations, and through a complete cooperation on the part of our secretaries, we can best accomplish our aims.

When secretarial duties in our State Medical Societies are thoroughly correlated, we will have overcome one of the major difficulties on the road to success.

RETROSPECT AND PROSPECT

R. L. GREEN, M. D.

PEORIA, ILL.

It is a pleasure to appear before you again. Last year you were called "the wheel horse" of the organization, because you guide the workings of your county society. You cannot keep your light under a bushel, keep it trimmed and timed with changing times.

Today, more than ever in our lives, there must be a closed union in our organization; that sounds very commercial with a flavoring of trade unionism. Your science, your art, your practice, are being encroached upon from all sides, with the commercial side pushing hardest. All sorts of economic quirks are being used to break down our ancient, honorable profession. The "Forum" spoke of us as living in horse and buggy days. Well, I take exception to this to contend that we know more about the dry goods business than Mr. Filene does about medicine. Yet he is the one to help finance the survey cost of Medical care, etc., and he has given time and money to this cause.

The Rosenwald Foundation ding dongs about Medical care, but in the Sears Roebuck organization they cut the man down in time when his per cent. runs up to anything like a living wage.

Read before Secretaries' Conference of Illinois State Medical Society, May 18, 1937, at Peoria.

So you may be sure what they would think of doing to doctors' incomes.

State Medicine—We have it. Look at your state hospitals. The supply of medicine clear up to supply of nurses and doctors are inadequate for the number of people handled, because of lay people who figure with the blue pencil at headquarters to direct that a doctor should care for so many people per hour like an assembly plant. One of my patients said this is what he liked about the Mayo Clinic—each man took care of a certain part. Theoretically, this sounds good; practically, Group Practice has not been such a success in different parts of the county—resolving back to why your state officers have fought all the schemes. The "patient-physician" relation is strained when a third party enters the contract and more strained if that third party is a lay person—even a nurse.

The fight has been kept up by your officers because the theory and practice of the various two hundred schemes submitted fail to measure up to our standard.

We have been assured the President will not try to put forth Socialized Medicine.

We must not be lulled by this, for Mr. Epstein has been working all the strings setting the stage differently.

In the *Literary Digest*, January 30, he has an article again showing the way the model bill will be introduced. There are now so many social workers under all kinds of names, each wishing to perpetuate his own job, and help some friend or relative to one. They bring pressure to bear on the legislator that is hard to resist as they count the votes—one by one.

I want to accent a thing here to show what united effort of our County Society has performed. One Alderman was obnoxious to our medical program: several doctors bought space in the newspapers, telling the truth about him and his medical stand. He was beaten. We now have through this same committee a new law passed by the state, and voted overwhelmingly by the city of Peoria, an independent board of health. This is such an outstanding achievement that the guiding hand should stand up. I ask the Chairman of this committee, our new delegate from Peoria County, Dr. Rutherford.

It is your duty to yourself as well as to your county society to keep the team pulling together, regardless of party denomination. Think only

in terms of what is the candidate's position on Health.

I wish to remind you again to keep your public relation committee upon its toes. Articles for press and radio are not for the personal aggrandisement of any one doctor, but for good of all.

Your local society may be small, and the meetings a little slow—primarily they are for the exchange of ideas to develop a different line of thought about some old topic. Let me remind you of the wonderful work of your educational committee. They have speakers for you ready to go on a very short notice with everything up to a full refresher course by a group.

Do not fail to avail yourselves of this wealth of material. If you do not want to go before a lay group—parent-teacher or club, write to Miss McArthur.

We can only win our battle against State Medicine by a united front. We do not want to have a "sit down strike." Sounds ridiculous, but they had one in Cuba, one threatened in Germany, and one was pulled in Great Britain.

You have had notice from our efficient State Secretary of your membership standing, recommending to you the eligible members in your counties. Tell your membership committee that the state officers cannot go out and get these men into meeting, and that you know their personal worth, which must not be lost sight of in case you have to go to his defense. The young men should be encouraged to come and bring the new ideas of their school to help the older men out.

At the economic conference, February 14, a university Dean said old men were those out of school five years. The man out ten years without post-graduate study was counted down the list. This economic conference, mostly officers of State Societies of the central states, bring together ideas of cooperation. We had as a sample three men in two meetings from the government on rehabilitation of farmers poor beyond hope of any but governmental aid. The program of medical care if written in as first proposed would have been state medical care for the family at \$25.00 per year. We stopped all this. Sounds easy, but two meetings of four hours each are not so easy.

In closing, we want your full cooperation to get all the members you can. When Dr. Camp

writes, answer promptly. When Dr. Neal sends out an S.O.S., tell your men to bear down on the legislator to contact his family doctor. Your councilor will help you put on an afternoon and evening refresher course for the counties in his district.

It is only by full team play, every man helping the other to meet our problems, medical, social and economic, and your office is the clearing house.

MEDICINE IN AN EVOLVING SOCIETY

J. R. NEAL, M. D.

Chairman, Legislative Committee

SPRINGFIELD, ILL.

Economic recovery has been rapid during the last few years. Social readjustment to the circumstances of returning prosperity has taken place very slowly. Technological improvement, on the one hand, and an aging population, on the other, have added to the difficulties of providing permanent employment for a great many people. The distressful experience of poverty intensified by the depression is still fresh in the memory of those who suffered most severely. A feeling of insecurity and uneasiness about the future is widespread. An atmosphere of restlessness and doubt prevails throughout the country. A large share of the population look forward with little hope of acquiring security against essential necessities through their own unaided efforts. They look naturally toward the government for help.

This situation is fertile soil in which the seed of social reform and change take root and flourish. Sensing the opportunity, the genuine, philosophical reformer, along with the would-be reformer, the agitator and the exploiter, are busy with plans and programs. Each is offered as the one and only valid means of salvation for the country and for society. Evidence of this trend is found on every hand.

The proposed change in the Supreme Court, for example, has kindled the fires of bitter controversy and strife. The Wisconsin Legislature has under serious consideration with the support of the Governor, a bill which competent observers believe would establish the foundation for a socialistic government in that State. Mayors and governors representing large populations have petitioned the President to continue the policy of

federal relief. The leading educational organizations of the nation have endorsed a plan of public education which would give the federal government control through subsidies over the public school systems of the nation. Labor disputes are widespread. The influence of organized labor is in ascendancy. The spirit of change and readjustment in the social order is at large.

Medicine has not been overlooked by those who would create a new society in a new world. The practice of medicine is rightly considered as a fundamental factor in social life. Many of the plans put forward with respect to change, however, appear to assume that the medical profession is not aware of this fact. They presume that the practice of medicine has been and continues to be static. The proponents of these plans either refuse to see or are blind to the ever changing progress and adjustments made by medicine to meet new situations. They offer the idea of compulsory health insurance as a panacea of medical care.

That compulsory health insurance is under serious consideration in the minds of many people cannot well be doubted. The subject was brought forcefully to public attention in 1932 by the Committee on the Cost of Medical Care. A system of health insurance was included in the original draft of the Social Security Act. Since 1932 the principle of health insurance was endorsed in resolutions adopted by the American Federation of Labor at three different annual conventions, the latest in 1936. More recently the subject has been publicly revived by the report of the American Foundation. While no specific conclusions were drawn and no recommendations made in this report, the views and opinions gleaned from 2,200 physicians were so presented as to emphasize the subject. Newspapers were quick to exploit the idea.

On what grounds are the schemes of health insurance built? Does the free availability of medical service lead to its intelligent use? Experience in European countries offers no proof that the general health has improved under health insurance schemes. Evidence assembled from various sources in this country fails to show that any advantage would be gained by such a system. This evidence is based upon the experience in the United States Army, on several local projects in socialized medicine and on

studies of prevailing health conditions in the general population.

Medical service in the Army is equivalent to the best that might be expected from any form of compulsory health insurance. It is valid, therefore, to compare the health of the Army with that which prevailed among 39,000 people in the general population where the family incomes ranged upward from \$1,200 with the majority falling in the \$1,200 to \$2,000 class. Among these 39,000 people about 40% were children, while the Army is made up of selected males in the vigorous age of life.

In 1935, according to the annual report of the Surgeon General, there were 585 cases of illness and accidents per 1,000 officers and men in the Army. Among the 39,000 civilians there were 516 cases of illness, accidents and pregnancies per 1,000 men and women and children which caused the loss of as much as one day from work, school or other occupation. For all illnesses including inconsequential colds and headaches, the rate among the civilians was 850 per 1,000 individuals. In the Army a physician saw every case of record. Among the civilians a physician saw 79% of all cases and 85% of those that resulted in the loss of one day or more from usual occupation. The health record of the 39,000 civilians was collected by the U. S. Public Health Service through nurses who visited each of the 9,000 families involved once a month for a year.

Comparing the Army experience with that of 174,643 male industrial employees a similar situation is found. From diseases alone the lost time in the Army amounted to 8.6 days per man in 1935. Among the industrial employees the average lost time in 1934 from sickness and non-industrial accidents causing disability for one week or more was only 3.9 days per man. While these figures are not strictly comparable, because of the one-week factor in the lost time of the industrial workers, it is unreasonable to believe that the less serious illnesses caused a greater volume of lost time than did those of longer duration.

From these records of experience it is clear that compulsory health insurance, like that which prevails in fact in the Army, adds nothing to the health advantage of those concerned.

Another interesting study was conducted by the Metropolitan Life Insurance Company. In a

census of 6,245 children between the ages of six months and 15 years it was found that 4,749 were not protected against diphtheria. Inquiry revealed that the parents of one-half of these unimmunized children had merely neglected the matter. They knew that inoculation was safe, effective and cheap. They believed in it. They could afford the cost. They had simply lacked the urge to have it done. On the other hand, diphtheria has been practically eradicated from many cities through the vigorous work of health departments and the medical profession. Public health service with the cooperation of the medical profession rather than compulsory health insurance accomplished this improvement.

More illuminating still are the records of health in several communities where socialized medicine is practiced. In Roanoke Rapids, North Carolina, three cotton mills, a paper mill and an electric power company operate a health insurance scheme for the benefit of their employees and dependents. The municipality had a population of 3,404 in 1930 while the industries employ about 5,000 people. Most of these live in the community. It is reasonable to assume, therefore, that the results of the socialized health service should be reflected in the health conditions of the community. Statistics from the North Carolina State Board of Health show that the average annual maternal death rate in Roanoke Rapids for the five years ended with 1935 was 8.3 per 1,000 births. The average rate in Illinois for the same years was 5.4. The average annual infant mortality rate for the period in Roanoke Rapids was 101.0. In Illinois it was 51.9. The average annual death rate in Roanoke Rapids from diphtheria was 12 per 100,000 population against 2.9 in Illinois; from typhoid fever it was 18 against 1.5 in Illinois; from whooping cough it was 48 against 2.7 in Illinois and from tuberculosis it was 53 against 55 in Illinois. The average annual prevalence rate of diphtheria in the three years ended with 1936 was 421 per 100,000 in Roanoke Rapids against 28 in Illinois. The Roanoke Rapids case rate from whooping cough was 1,570 against 155 in Illinois; from typhoid fever it was 60 against 10 in Illinois; from tuberculosis it was 254 against 120 in Illinois. This is the story in a community where a prepayment health insurance system has been functioning for the benefit of a majority of the population for more than a decade.

A similar situation prevails in Endicott, John-

son City and Owego, New York. In these cities the Endicott-Johnson Shoe Manufacturing Company provides a complete medical service for their employees and dependents which constitute a considerable proportion of the population. The average annual infant death rate in each of these cities has exceeded the rate for the whole state of Illinois for the last three years. Mortality from infantile diarrhea has been at a considerably higher rate in those cities than in Illinois. The general death rate was sharply higher in those cities than in Illinois. The socialized medical service of the Endicott Johnson Company was inaugurated in 1916 so that ample time has elapsed to prove its influence on community health.

The record of experience, therefore, gives no valid evidence that the general health is protected better under systems of socialized medicine than otherwise. Nothing can be gained by such a scheme while it opens the way for grave abuse.

I have devoted a good deal of time to discussing health insurance because that problem is by no means settled in this country. An adjustment in the system of medical practice so as to provide more adequate care for the poor is imperative. The dominant trend of public thought and of legislative action is toward collective bargaining and collective activity. Medicine must adjust itself to this situation in order to prevent the imposition of impractical, non-productive and uneconomical health insurance schemes.

Just now, the public is aroused and rightly so over the venereal disease problem. The magnitude of prevalence and the possibilities of control and prevention, particularly of lues, have been impressed upon the public. The idea of eradicating syphilis has appealed to the popular imagination. This is reflected in a bill before Congress which would appropriate \$25,000,000 for venereal disease control alone. It is shown likewise in a bill making premarital physical examinations compulsory which has passed the House of the Illinois General Assembly. It is indicated by demands by local communities for State aid in establishing social hygiene programs.

Solving the problem of syphilis is largely a matter of diagnosis, treatment, epidemiology and patient follow-up. Handling this matter judiciously will have an important influence over the trend of expanding medical care throughout the whole field of medicine. Close cooperation be-

tween the medical profession and the public health authorities will result in sound practice from every point of view.

Health departments are in a position to guide public thought and determine to a large degree the trend of public action. They need the sympathetic and active cooperation of the medical profession.

Health departments prefer to leave the matter of treatment to the private practitioner. Prevalence records show, however, that treatment has been inadequate and diagnosis far from complete in the past. Working together the health officer and the private physician can remedy this situation satisfactorily. Through the free distribution of drugs, the extension of laboratory and epidemiological service the department of health can reduce the cost of treatment and uncover the sources of infection. Through subsidies from the State, local clinics under local control can be maintained for the treatment of the indigents. The success of such a plan will depend, however, upon the hearty cooperation of physicians in case reporting and in utilizing the services offered for diagnosis, contact-investigation and follow-up.

Much the same may be said with respect to other communicable diseases. Support of the public health program will do a great deal to defeat the movement toward health insurance. Public health service as practiced in Illinois and in the nation generally is largely a matter of education of the public and of special services to the medical profession. It makes possible the control over communicable diseases to a degree that could not otherwise be attained.

The medical profession in the past has been too prone to be an opposition party. This attitude has tended to cultivate popular disfavor of organized medicine. Alignment of the profession with sound programs of public health will correct this tendency and check the movement toward State medicine in the form of compulsory health insurance.

Social conditions are unsettled. Reform is the order of the day. Medical practice is a matter of deep public concern. Guiding the trend of changes which are bound to come will require sound thinking and a clear vision. County medical Societies are faced with the opportunity of moulding public opinion and shaping the future of medicine through educational efforts. I commend these matters to your serious consideration.

DEFINITION OF SOCIALIZED MEDICINE

ROBERT H. HAYES, M. D.

CHICAGO

Socialized medicine designates the furnishing of medical services which are paid for with funds collected from groups of individuals or with funds established by philanthropy or taxation.

State medicine is that form of socialized medicine under which personal and individual medical services for persons in the general population are furnished by government employees who are paid out of tax funds.

It is evident that "socialized medicine" is a very broad term, by which is usually meant the payment for medical services by any means other than directly by the individual patient to the individual physician. Accordingly, the practice of medicine is socialized in many respects. There are records of over a thousand plans throughout the United States whereby groups of patients arrange to pay for the medical services of the individual member. These plans include industrial medical service systems, medical and hospital benefit organizations, mutual benefit associations, trade union plans, fraternal or lodge plans, group medical practice plans, community health associations, and college student health services. Under a number of other arrangements, the individual patient often receives medical services without being required to pay at all, or without directly paying the physician. The more than two thousand outpatient departments of hospitals, and the more than four thousand independent clinics are examples of arrangements whereby persons receive medical services free or without directly paying the physician. The independent clinics include all public health clinics and so-called curative clinics.

The term "state medicine" should be restricted to the attempts of the government to provide medical services through salaried employees directly to individuals in the general population. I believe socialized medicine to be injurious to the best values of medicine, in that it will produce but a perfunctory and impersonal medical service. It is interesting to observe that medical care of the indigent paid for by the state with the services rendered by independent physicians, as now furnished under emergency relief,

Read before Secretaries' Conference, Illinois State Medical Society, May 18, 1937, at Peoria.

is socialized medicine; when the services are rendered by a salaried city or county physician it becomes state medicine.

The Medical League for Socialized Medicine insists that socialized medicine calls for a system of complete medical service available to all citizens at public expense. The League indicated the following difference between socialized medicine and state medicine:

Socialized Medicine implies a system of free medical care and practice sponsored and financed by the state, responsible to the state, and organized, operated and regulated democratically by the medical and allied professions.

State Medicine implies the very same thing as above, except that the system of medical care and practice would be organized, controlled and regulated BY the state FOR the medical and allied professions.

The public in general wants evolutionary progress in everything—not revolutionary upheaval. The public in general finds no real dissatisfaction with the kind of medical service it is receiving. It finds that under the present medical system American preventive medicine is not equaled anywhere in the world; that American sickness and death rates are lower than in any other country. The private physician in America actually makes preventive medicine part of his practice.

The patient knows that free choice of physician will be restricted or prohibited under a program of socialized medicine, as the leading physicians with more independence will not become a part of a socialized medicine scheme. Medical attention will become a mechanical system rather than a personal service. Mass production methods will be used. The patient will lose the advantages of the confidential patient-family physician relationship wherein the individual needs of every person are recognized, and if ever a human being wants to be an individual—it is when he is sick. The very sick patient will not obtain adequate service because of the demands for unnecessary minor services by shams and neurotics. The quantity as well as the quality of service will be reduced through efforts to cut down costs.

The employed person in this country does not want socialized medicine, for he realizes all too well that it means less wages and more taxes. The employed person prefers to purchase his own medical care and other necessities when and

from whom he pleases in the true American way.

Over 100,000 physicians in the United States do not want socialized medicine, as it would furnish to the people a medical service limited in scope and would destroy public confidence in the medical profession. The physician has a sacred obligation to maintain the *quality* of medical care. The physician does not want the noblest of professions to become a political football, with favoritism and patronage resulting in slipshod diagnoses and neglected treatment of patients.

WHO WOULD PROFIT BY SOCIALIZED MEDICINE?

(a) The profit seeker—such as insurance carrier, the lodge, the “friendly society,” intervening between patient and physician, would immediately take on new activity and require more paid employees.

(b) A very small minority group of physicians whose friendship with unscrupulous politicians would result in their sharing in the spoils.

(c) Professional philanthropy and social welfare have created a new profession. Some social workers see in socialization of medicine a multiplication of their work in providing medical relief, and see also the creation of a fertile field for the fast-growing profession and for the employment of large numbers of such social workers. More work—more social workers!

The paid reformer would completely change the present facilities for medical service because of a negligible percentage of the people who are said to find illness costs heavy in a given year.

The paid reformer has been told, but forgets, that the Committee on the Costs of Medical Care surveyed from month to month for an entire year the health needs of some 39,000 people in this country. Of the total, some 47.9% needed medical care and received it; 47.1% of the people had no need for medical care during the year, despite monthly visits of a nurse, who was endeavoring to check their needs. This leaves but 5% of the people to be accounted for and, having in mind those who choose to go to cult practitioners, it would appear that there is a negligible, if any, percentage of the people who ask for medical service and do not receive it. Should the scientific benefits of our present system of *quality* service be sacrificed to protect (partly) against sickness costs for a negligible percentage of the population?

The paid reformer is ever seeking a panacea for poverty. In socialized medicine he visions

a "new cure" and refuses to admit the probability of failure. The salaried altruist may make high sounding promises whose fulfillment is too expensive for this or any civilization to attempt.

The paid agents of certain philanthropists and certain social workers are interested in the relief of poverty and in securing the resources for such relief. Such social workers distribute cash benefits, not their own money, according to their own standards and opinions of what is good for the recipient. They naturally seek to do the same with the services of the physician (also not their property) and resent any implication that they are not equally competent to determine how and to whom and in what amounts these services shall be distributed.

A number of so-called philanthropic foundations have spent millions of dollars in the last ten years on surveys of medical care. The money so spent would have paid for the medical care of all the people detected by these surveys as capable of using some medical or dental service. The paid agents of certain philanthropists refuse to listen to reason or experience. They know, for instance, that few major insurance companies in the United States are willing to write sickness insurance because it is a losing business.

Beware of a system of medical care which would:

Destroy public confidence in medical service.

Be undesirable in its very nature (impracticable and inefficient).

Discourage quality service.

Substitute a mass production system for an individualized personalized service.

The American medical profession has always provided and furnished good medical care. No other class of men is so generous of their services and do so much charity cheerfully. Let us not change this picture.

TEN POINTS FOR THE PEOPLE'S PROTECTION

1. All features of medical service in any method of medical practice should be under control of the medical profession. No other body or individual is legally or educationally equipped to exercise such control.

2. No third party must be permitted to come between the patient and his physician in any medical relation. All responsibility for the character of medical service must be borne by the profession.

3. Patients must have absolute freedom to choose a legally qualified doctor of medicine who will serve

them from among all those qualified to practice and who are willing to give service.

4. The method of giving the service must retain a permanent, confidential relation between the patient and a "family physician." This relation must be the fundamental and dominating feature of any system.

5. All medical phases of all institutions involved in the medical service should be under professional control, it being understood that hospital service and medical service should be considered separately. These institutions are but expansions of the equipment of the physician. He is the only one whom the laws of all nations recognize as competent to use them in the delivery of service. The medical profession alone can determine the adequacy and character of such institutions. Their value depends on their operation according to medical standards.

6. In whatever way the cost of medical service may be distributed, it should be paid for by the patient in accordance with his income status and in the manner that is mutually satisfactory.

7. Medical service must have no connection in any cash benefits.

8. Any form of medical service should include within its scope all qualified physicians of the locality covered by its operation who wish to give service under the conditions established.

9. Systems for the relief of low-income classes should be limited strictly to those below the "comfort level" standard of incomes.

10. There should be no restrictions on treatment or prescribing not formulated and enforced by the organized medical profession.

DISCUSSION

Dr. William A. McNichols: Doctor Hayes states that the people in general are well pleased with their medical care. In a recent census of the lay organizations it was found that the people in general were well satisfied with the medical care and their fees, but a large Hospital bill was quite a strain on many family budgets. Something will have to be done about this.

In Lee County, since Paul DeKruif's recent articles on maternal deaths, there has been some agitation and the various woman's clubs have asked to be informed what the maternal death rate is. In Lee County we found it to be 6.2 per 1000 which is quite high, but of those cases there were several complications which had nothing to do with the obstetrical condition which caused their death.

Obstetricians I have talked to about our death rate, state that the reason De Lee's death rate and the death rate of foreign countries is so much lower than our own is because of the difference in the form of statistics that these individuals keep. It is pretty hard to put up before various lay organizations that the difference in death rate is due merely to the juggling of statistics.

Some of the lay organizations in our country are quite distressed over our high maternal death rate. In the last one thousand cases we reviewed, three of our deaths had not had any pre-natal care at all.

I would like to know if Doctor Hayes has anything

to say about the obstetrical opinions of the lay organizations.

Dr. Hayes, in closing: Dr. McNichols, I think the greatest trouble that has arisen along the obstetrical fields has been caused by the articles in the lay publications, particularly those published by Dr. Paul DeKruif. He has allied himself with certain individuals in this country and has misinformed the public, on the matter of obstetrics. He has quoted certain figures from certain institutions in Cook county in which institution they did not take the moribund or badly infected expectant mother, either pre- or post-obstetrical; therefore, those figures he quoted are authentic only for that institution. In a recent article in one of the lay magazines, he took to task the family physician and insinuated that it was because of the inactivity and the inefficiency of the family physician in taking care of obstetrical cases that the mortality rate was so high. Remember this, that you can not go to the expectant mother and tell her she has got to come to you for examination. You have got to wait for her to come to you. The social worker in the larger communities finds out in some way through her rounds in the neighborhood that a certain woman is expecting and she goes to that woman and tries to get that woman to go to some one in the local free clinic or dispensary instead of going to the family doctor. We have had more of this type of interference in the manufacturing or commercial communities than in the well-to-do residential communities. We have a great many complaints in Chicago along this same line. Answering Dr. McNichols' question, the unrest is stirred up by lay bodies and notoriety seekers butting in to something they don't know anything about. Just the same thing occurs in malpractice suits. Some careless word is dropped and the family gets it, misinterprets it and away they go, off the handle, to some shyster lawyer.

MASTITIS, MAZOPLASIA, MASTALGIA,
AND GYNecomastia IN NORMAL
ADOLESCENT MALES

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and
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CHICAGO

If one examines a number of boys between the ages of 13 and 16 years, a certain percentage of them will be found to have a small lump under each nipple. This lump is circular in shape and commonly about 1.5 cm. in diameter; it often hurts when touched. It is a mass of glandular and fibrous tissue¹ which we propose to call the subareolar node;²⁻⁵ it is the principal subject of this paper, since we shall present evidence based

on more than 1000 examinations of 700 individuals that all boys at some time during puberty have such a swelling. The terms mazoplasia, mastitis, mastalgia and gynecomastia in young men refer to various stages in the development of this structure.

The importance of the subareolar node lies partly in the various meanings that have been assigned to it in the past. Many authors have considered it an inflammatory mass (mastitis adolescentium), very resistant to treatment and calling for the application of every therapeutic resource of the physician.⁶ One author believed that its appearance was, so to speak, a physiological protest again masturbation, and used it to frighten boys from whom he had elicited a "confession."⁷ Two other authorities, however, suggested that the appearance of the nodes was the expression of a need for sexual activity, since they arose during puberty and subsided during the period when sexual adjustments were presumably being made.^{8, 9} A psychiatrist told us that he had seen cases of autoerotic manipulation of the nipples in adolescents, which might be a factor in stimulating mammary growth. In many instances the node has been regarded as a neoplasm and surgically removed. The diagnosis was supported by a probably mistaken interpretation of the microscopic examination of the mass after removal.¹ Certainly the physiological swelling of the breast should be considered in every instance before amputation is performed.

The reason for this confusion has been the complete lack of quantitative information about the behavior of the average male breast during

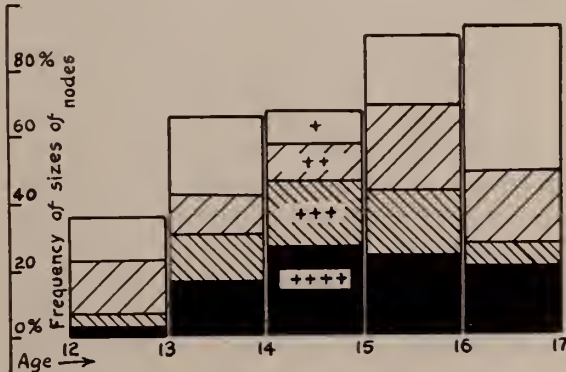


Fig. 1. Frequency of nodes of various sizes under the nipples of normal boys of different ages. Graphic representation of the data of Table 1 shows that the incidence of ++++ nodes is greatest at the age of 14.

From the Department of Physiology and Pharmacology, Northwestern University Medical School, Chicago, and the Illinois Soldiers' and Sailor's Children's School, Normal, Illinois.

adolescence. In the investigation to be reported here we have attempted to secure such information. It will be seen that any one of the above views might be supported by one or another of the facts we have found; taken as a whole, however, the data lead to quite a different set of conclusions, which will be found at the end of this paper.

Material and Methods. The first set of data, series D, consisted of the results of a single observation on each of 49 boys between the ages of 12 and 19. The notes were made incidentally to the general physical examination of a group of boys admitted to a summer camp in southern Wisconsin in 1927. The boys were residents of Illinois. The results, which will not be given

seen in this series, but the incidence in the 16.5 and 17.5 year age groups was much lower than that for the same groups in series L.

A fourth series, C, consisted of 47 boys, of ages between 9 and 19, living in one of the most congested districts of Chicago. This series was examined with the aid of Dr. C. U. Culmer.

The most complete data were those obtained in the 3 successive examinations of series L. The observations included date of birth, height, weight, bi-iliac diameter (obstetrical calipers), color and distribution of hair, color of eyes, height of nipples (special micrometer), diameter of areola (Vernier caliper), pitch of voice (crude estimation by 2 independent observers), and size of thyroid (palpation).

TABLE 1												
Range of Ages	Number of nipples examined	Frequency of each size of node										
		in absolute figures					in percent					
		++++	+++	++	+	0	++++	+++	++	+	0	
12.00-12.99	88	3	3	14	12	56	3	3	16	14	64	
13.00-13.99	98	17	14	12	23	32	17	14	12	23	33	
14.00-14.99	74	20	15	8	7	24	27	20	11	9	32	
15.00-15.99	50	12	10	13	10	5	24	20	26	20	10	
16.00-16.99	14	3	1	3	6	1	21	7	21	43	7	

in detail here, led to the impression that certain lumps which were palpated under the nipples in many of these boys might represent an essential occurrence among the phenomena of puberty.

A second series, L, consisted of 168 boys between the ages of 11 and 18 living in an institution in central Illinois. This series was examined in October 1935, April 1936 and February 1937. Apparently conclusive evidence was obtained showing that the subareolar node was a universal and normal incident at puberty, for a node was found under every nipple examined in two of the older age groups (11 boys between 15.50 and 15.99 and 5 boys between 17.00 and 17.99 years of age). This led to the question of the subsequent decline and disappearance of the node, since a few older men interrogated or examined did not have any palpable vestiges of such nodes.

Accordingly, a third series, E, was examined in September, 1936, with the cooperation of Dr. Samuel J. Lang. It consisted of 432 men, entering a university from all parts of the United States and ranging in age from 16 to 45. The slow regression of the node, which had only been surmised from previous data, was distinctly

Probable History of Individual Nodes. In Table 1 are given the results of the first examination of Series L. The boys whose ages lie between 12.00 and 12.99 will be referred to as the 12.5 age-group. Of the 88 nipples examined in this group, there were 56 (=64%) under which no node could be felt. The nodes that were felt under the remaining 32 nipples were rated as follows:

+

 in 12 instances, or 14%

++

 in 14 instances, or 16%

+++

 in 3 instances, or 3%

++++

 in 3 instances, or 3%

These data are represented by frequency-polygons in Fig. 1. It is seen that the incidence of very large nodes rose sharply to a clean-cut maximum in the 14.5 age-group; it then subsided, while the frequency of nodes in general increased steadily as far as the observations went.

For the purposes of analysis the data can also be represented as ordinary curves.² When this is done it is seen that the rise of any node must be quite rapid, that the ++++ stage must last approximately a year, and that the subsequent decline must take several years. We have, in fact, been able to resynthesize the given family of curves from others constructed on the following assumptions: The average node begins to grow

at the age of 13.0 years, requires 15 months to reach the +++++ stage, remains there for 15 months, and then declines so slowly that at the age of 17.0 it is still classified as ++; the age of beginning growth varies so that some nodes start as early as age 11 while others, which probably never reach the +++++ stage, start as late as age 16. All these various assumptions are corroborated by detailed study of the individual histories of those boys of Series L who were examined 3 times.

Measurement of Nipple-Height. The palpa-

such that points representing less than 25 boys could not be included in the curves without introducing meaningless irregularities, and that consequently the subdivision into half-year age-groups was more than the data would stand. Table 2 is based on the corrected ages, and the grouping is by one-year intervals. Individual boys appearing in one group in the 1935 examination naturally appear in a later group the following year, and as the older boys leave the institution the total number in successive examinations shrinks.

TABLE 2

			Examined October 1935		Examined April 1936		Examined February 1937	
Age			Number of boys	Nipple height (mm.)	Number of boys	Nipple height (mm.)	Number of boys	Nipple height (mm.)
Range		Average						
12.00-12.99.....		12.5	44	0.57±0.11				
12.50-12.99.....		12.75			25	0.64±0.14		
13.00-13.99.....		13.5	49	1.15±0.09	43	1.27±0.12	23	0.70±0.16
14.00-14.99.....		14.5	37	1.14±0.15	44	*1.50±0.14	34	*1.65±0.14
15.00-15.99.....		15.5	25	*1.40±0.24	25	1.25±0.18	29	1.04±0.22

The maxima have been marked by asterisks.

tion of the subareolar nodes gave results that could not be stated quantitatively except in the system of arbitrary units used in Table I. It seemed desirable to devise a more objective method. For this reason we constructed a "thelometer" consisting of a micrometer screw mounted vertically on a small tripod. When the instrument was balanced upon the chest of the subject in the supine position, the screw could be turned down until the tip just made contact with the papilla mammae; this gave a reading which was called the nipple-height. Obviously the value so obtained was the resultant of a number of variables—the convexity of the subject's chest; the firmness of his skin, muscle, and subcutaneous fat; the subject's position, and possibly even the temperature of the room. Nevertheless it was soon evident that the existence of a large node under the areola mammae would register in this way, and the application of statistical methods to the results gave a correlation coefficient of +0.52 between the thelometer reading in millimeters and the size of the subjacent node in arbitrary units.

When the average nipple-height for each age-group in series L was first plotted against age, the curve obtained⁴ had a maximum in the 14.25 age-group. It was found later that the birth-dates of 16 boys had been incorrectly given. It was also found that individual variations were

Table 2 shows that the corrected data give maximum nipple-heights for the fourteenth or fifteenth year.

The Sequence of Events in Puberty. The most coherent summary that we have been able to find of the changes of puberty in boys is the classic series of articles by Crampton.^{10, 11, 12} His fundamental criterion of physiological age was the stage of development of the pubic hair. It was found that during the period of pubescence,—that is, during the period when the pubic hair is appearing and approaching full growth—there is an acceleration of the rate at which the boys gain in weight, in height and in strength as measured by a dynamometer. The acceleration results in so marked a disparity in the physical status of individuals within any given age-group that the sub-classification of high school students into prepubescent and postpubescent groups within a given class is strongly indicated, especially since the postpubescents have a significantly superior scholarship. The favorable results actually obtained from such sub-classification were summarized later by Foster.¹³

Our own observations on the chronology of puberty were made in the hope of obtaining a clue as to the nervous or endocrine influence responsible for the growth of the subareolar node. We wished to use physical findings that could be obtained at a single examination. The simplest

to use are 1. pubic hair, 2. facial hair, 3. chest hair, 4. axillary hair, 5. size of external genitalia as represented by the diameter of the testicles, and 6. pitch of voice. The curves for the first three have been published,⁴ and show that the pubic hair was growing most rapidly at about 14.0 years, while the facial hair lagged about a year behind. The axillary hair gave a curve that practically coincided with that for facial hair. The hair on chest and legs gave us no information of value; its appearance was generally late, the individual variations were very great, and the amount was difficult to express numerically. Thus the pubic hair was earliest and most constant, the facial and axillary hair developed more slowly, and the hair on chest and legs was last and most variable.

It is of some interest to note the data on shaving in a group of 15 institutional boys between the ages of 16.00 and 16.99. Eight had never shaved. Of these, 1 had facial hair rated as 0, 3 as +, and 4 as ++. Of the remaining seven, 1 had shaved once, 1 twice, 1 about once a month, 1 about every 2 weeks, and 3 about once a week.

The testicular measurements were made because some index of the size of the genitalia was needed. A growth-curve that rises sharply at puberty is characteristic of the genital tissues, as was demonstrated by Scammon.¹⁴

The testicular measurements were made by applying a Vernier caliper to the testicle with as uniform a pressure as possible in such a way as to measure the least of the three diameters of the ellipsoidal mass. An obvious source of error here is the thickness of the scrotal integument; this introduces a systematic error into all the measurements and robs them of any absolute, but by no means of their great relative, significance. The averages of the readings obtained on Series L in 1935 are given in Table 3.

TABLE 3

Group	Average Age	Number of boys	Average testicular diameter (cm.) D	Cube of D
1.....	12.5	42	1.69	4.83
2.....	13.5	45	2.00	8.00
3.....	14.5	32	2.29	12.00
4.....	15.5	22	2.58	17.17

If one assumes that the weight of the testes is proportional to the cube of the diameter, the rapidity of average growth is appreciated; the

penis and most of the other genital structures must be supposed to increase at the same striking rate.

It must be noted, however, that the course of individual growth cannot be deduced from the course of average growth. Average-curves not only conceal some phenomena but also produce illusory ones. A striking instance of this is the "prepubertal weight-rise" whose existence was noted by some authors in the curve for average body-weights but which was shown by Cramp-ton¹⁵ to be absent in individual growth-curves. In the case of the testicle, the curve of averages does not give a suspicion of the sudden and extensive rises seen in individual curves. An illustration occurs in the protocol of L 18 (not included here), which shows that the testes must have doubled in weight within 6 months while the subareolar nodes were developing from — to + + + +; the testes again doubled their weight in the ensuing 9 months while the subareolar nodes were beginning their decline. Evidently there will be individuals who greatly exceed the average rate for a time, while others must fall far short of it.

The time-relation of the voice-changes to two other changes of puberty (pubic hair and subareolar node) has been reported in a previous paper.³ We are now in a position to insert some of the other phenomena in their proper places, and can say that in the series L the most usual sequence of events was this: (a) the change of voice and acceleration of testicular growth started first, at about 13.0 years; (b) the growth of pubic hair was fastest at about 13.75. (c) the acceleration of increase of body-weight began usually at 14.0; (d) subareolar nodes reached their maximum size at about 14.25; (e) the appearance of beard and of axillary hair was fastest at about 16; (f) slow changes in the subareolar node continued for a long time, mostly in the direction of softening and complete disappearance, but sometimes in the direction of persistent soft glandular masses or various degrees of gynecomastia; (g) the growth of hair on body and extremities generally came last, but was most variable as regarded extent and time of appearance. Departures from this sequence were too numerous and varied to describe, and can only be exemplified in some of the protocols given below; the above is the most usual order.

The Later History of the Node. Since we had

concluded that the subareolar node appears in every boy as an essential feature of the puberal changes, the absence of palpable mammary tissue in most older men remained to be demonstrated and accounted for.

The expected decline of the node was seen in Series E, which consisted of 432 men between the ages of 16 and 45, but some new phenomena were encountered. It was found at once that rating the glandular mass on the basis of *size* alone, which had been sufficient in boys up to 16, would not suffice for older men. After 16 the masses varied not only in size but also in hardness. By rating each quality (size and hardness) separately on a scale from 0 to 4, and then taking the product, a composite rating was obtained in arbitrary units from 0 to 16. This method was used consistently for Series E. The results are given in Table 4.

TABLE 4

AGE		Number of men	Percentage of nipples with no underlying nodes	Average rating of subareolar nodes	
Range	Average				
16.00-16.99	16.5	5	40	1.40	± 0.39
17.00-17.99	17.5	64	75	0.97	± 0.12
18.00-18.99	18.5	111	73	1.10	± 0.10
19.00-19.99	19.5	84	85	0.85	± 0.12
20.00-20.99	20.5	84	87	0.61	± 0.09
21.00-45.00	24.4	68	84	0.43	± 0.07
		416			

This table shows that as one goes on to older men one finds more and more nipples without an underlying mass of palpable glandular tissue. It also shows that age-groups of 100 or more individuals are necessary to obtain reasonably smooth curves, because of the great individual variations. The magnitude of these variations is indicated by the high probable errors of the averages in the last column.

Sixteen individuals are omitted from the above table. Of these, 7 men were so obese that palpation of the nipple region gave no information. An eighth man, who may have represented the extreme of this group, was very obese, had almost pendulous breasts, and volunteered the suggestion that he was "a pituitary case." It was impossible to tell whether the softly nodular masses in the pectoral region were fatty or glandular tissue. Three other men who were not obese had soft masses in the pectoral region, but two ex-

aminers disagreed as to whether the masses felt like glandular or like fatty tissue. Two men are omitted from the table because there were indications that some definite disturbance of puberty had occurred in their cases. One, age 18, stated that his puberty was late; his pubic hair was sparse and his voice difficult to classify. Under each nipple there was a node rated ++ as to size and +++ as to hardness. The other, age 20, stated that erotic dreams with seminal emissions had started only 2 years before and that his voice had not yet changed definitely. He had shaved for the first time at the age of 19, and was at the time of examination shaving once or twice a week. At the time of examination both nipples hurt when touched and had been tender for 2 months. On the right side the areola measured 2.2 cm. in diameter and overlay a node whose diameter was 3.3 cm. On the left, the areola measured 2.8 cm. (larger than normal) and overlay a node whose diameter was 3.5 cm. The remaining 2 men had definite cases of gynecomastia.

Two Cases of Gynecomastia. One youth, age 18, presented no abnormalities as he went through the routine physical examination excepting perhaps an unusually light pigmentation of skin and hair (bordering an albinism). He was sparsely built, and under each areola there was palpable a distinct mass of soft, nodular tissue overlying the firm pectoral muscles. The mass on the right had a diameter of 5.6 cm.; that on the left measured 6.0 cm.

A second, age 18, presented no abnormalities except a definite gynecomastia. Distinctly palpable over the firm pectoral muscle on each side was a glandular mass about 5 cm. in diameter; on each side the overlying areola was raised to convexity by the gland tissue and was conspicuously larger in diameter (.3 cm.) than the normal areola (roughly 2 cm.)

Gynecomastia in Statu Nascendi. In the 1937 examination (the third) of Series L we found one additional case of gynecomastia, and going back over our previous data, we found we had the whole story of its development. The data on this boy (L 137) are given in protocol 1.

Is the Subareolar Node Remembered? The last 161 men of Series E were asked whether they remembered having had lumps under their nipples at the age of about 15; of the 161, 138

PROTOCOL 1

History of Boy L 137. Date of birth:	1922-VIII-31.		
Date of examination.....	1935-X	1936-IV	1937-II
Age (years and quarters).....	13-1	13-7	14-5
Weight (pounds and quarters)	88-1	100-0	102-1
Height (inches and eighths)...	60-7	62-5	65-7
Hair: Pubic	+	+++	++++
Axillary	—	—	—
Facial	—	—	—
Testes: R (diameter in cm.)..	2.39	2.82	2.95
L (diameter in cm.)..	2.38	2.79	3.10
Mean = M = $\frac{1}{2}$ (R+L)	2.38	2.80	3.02
Cube of M	13.5	22.0	27.5
Nipple-heights (mm.) right...	0.6	4.8	3.0
left....	1.0	4.0	2.6
Subareolar nodes, right.....	+	++++*	+++++**
left....	—	++++*	+++++**
Voice (high, changing, low)...	Ch	Ch M	Ch L
Weight-gain (lbs. per month)...	..	1.98	0.76

*Subareolar nodes are respectively 2.1 and 2.4 cm. in diameter, and tender to palpation.

**Right glandular mass is 6.1 by 6.9 cm. in diameter; left is 4.4 cm. in diameter. The masses did not really attract his attention until about 2 months ago.

(85.7%) said they did not. Of the 23 who did remember the lumps, 13 did not recall their being painful. The statements of the remaining 10 deserve brief summaries; in each case the number in parenthesis is the man's age.

E281 (20): At 13 he had to have his nipples bandaged because they were so sore.

E282 (20): At 14 he was so worried about the lumps that he went to a physician, who reassured him and said that they were normal. At 20 a node is still palpable under each nipple.

E287 (18): He remembers that his bathing suit chafed his nipples when he was 15 or 16.

E310 (17): He remembers a little tenderness at 15.

E321 (20): They used to hurt when he boxed at 15.

E342 (22): His bathing suit used to hurt his nipples a little at 15.

E361 (20): They have been tender for past two months. (Case of delayed puberty referred to above).

E368 (19): They caused him some discomfort at 13.

E371 (18): The right breast at 15 became inflamed and discharged pus; the left became sore but gave no discharge.

E416 (25): There remains a vague memory of tenderness.

Chronic Cystic Mastitis. What fate occasionally awaits the regressing subareolar node is shown by the anamnesis of E 225, a man who was 45 years of age when examined. The right nipple was missing, its place being taken by a large scar. The left nipple remained, though surrounded by scars. He stated that a chronic cystic mastitis had become so troublesome as to necessitate the surgical removal of the whole structure on the right at the age of 30. At 35 a similar operation became necessary on the left, but it was found possible to spare the areola.

Does the Sequence of Events in Puberty Suggest how Many Independent Hormones May be Active? It was our hope that among the various changes of puberty we might find at least one which would be so closely linked chronologically with the rise and fall of the subareolar node that a common cause would be suggested. In this we have been disappointed. The following 3 protocols illustrate this fact. It will be seen that in L 22 the subareolar nodes were regressing while both somatic and genital growth were extremely rapid; in L 90 the node was growing while somatic growth was also very rapid, but the genital growth was fastest while the node was regressing; in L 95, finally, accelerated genital growth nearly coincided with the rise of the node while somatic growth continued at a slow, prepubertal rate.

PROTOCOL 2

History of Boy L 22. Date of birth:	1921-XII-21.		
Date of examination.....	1935-X	1936-IV	1937-II
Age (years and months).....	13-10	14-4	15-1
Weight (lbs. and quarters)....	92-2	108-2	125-0
Height (inches and eighths)...	62-0	63-6	66-0
Hair: Pubic	++	++	++++
Axillary	—	+	++++
Facial	—	—	+
Testes: R (diameter in cm.)..	1.62	2.12	2.75
L (diameter in cm.)..	1.62	2.13	2.61
Mean = M = $\frac{1}{2}$ (R+L)	1.62	2.12	2.68
Cube of M	4.25	9.53	19.25
Nipple-heights (mm.) right...	1.0	0.0	—1.0
left....	1.8	—0.6	—0.2
Subareolar node right	+++	+	—
left	+++	+	—
Weight increase (lbs. per mo.)		2.67	1.88

*Tenderness present.

The protocol exemplifies the complete regression of the node.

PROTOCOL 3

History of Boy L 90. Date of birth:	1921-XI-26.		
Date of examination.....	1935-X	1936-IV	1937-II
Age (years and months).....	13-10	14-4	15-2
Weight (lbs. and quarters)...	104-0	122-2	131-2
Height (inches and eighths)...	62-5	64-2	67-4
Hair: Pubic	++	+++	++++
Axillary	—	+	+
Facial	+	+	+
Testes: R (diameter in cm.)..	1.82	1.77	2.32
L (diameter in cm.)..	1.85	1.93	2.50
Mean = M = $\frac{1}{2}$ (R+L)	1.84	1.85	2.41
Cube of M	6.23	6.33	14.00
Nipple-heights (mm.) right...	—1.3	1.8	0.3
left....	—0.4	0.6	—0.2
Subareolar nodes, right.....	+	+++	++
left.....	—	++	+
Voice	H, II	H, Ch	Ch, Ch
Weight-increase (lbs. per mo.)	....	3.02	1.00

In the above instance the somatic and mammary growth, both striking, were simultaneous, while the acceleration of genital growth occurred during a later period of slow somatic growth and

mammary regression. The gain of 18.5 pounds of weight in 6 months deserves notice. This protocol is also interesting because it contains the entire history of a pair of subareolar nodes, with rapid growth, inequality on the two sides, and slow decline.

PROTOCOL 4

History of Boy L 95. Date of birth: 1923-VIII-16.			
Date of examination.....	1935-X	1936-IV	1937-III
Age (years and months).....	12-1	12-8	13-5
Weight (years and months)...	75-0	81-0	86-2
Height (inches and eighths)...	57-2	58-1	60-1
Hair: Pubic	++	++	+++
Axillary	+	++	++
Facial	+	—	—
Testes: R (diameter in cm.)...	1.52	1.48	2.18
L (diameter in cm.)...	1.65	1.34	1.97
Mean = $M = \frac{1}{2} (R+L)$	1.58	1.41	2.08
Cube of M	3.94	2.80	9.00
Nipple-heights (mm.) right...	—2.1	—1.3	1.2
left....	—2.1	—2.0	1.9
Subareolar nodes, right	—	—	+
left.....	—	—	+++*
Voice	H	H. H	H. H
Weight-increase (lbs. per mo.) ..	..	1.00	0.57

*First noticed a week ago.

In the above history it is seen that the rise of the subareolar node was simultaneous with a marked acceleration of genital growth, while the acceleration of somatic growth apparently remained for some future time. The sudden appearance of a large node under one areola and of a smaller one under the other areola measurably increased the nippleheights. The possibility of striking changes in the appearance of the external genitalia within a few months is appreciated when one notes that here the testicles must have tripled their weight in 9 months.

Fluctuant Course of Node: Acne. A given node, having become palpable, may grow to a conspicuous size, decline for a time, again grow large, and again subside. Such fluctuations will be lost in curves for averages in group studies. Only a prolonged and detailed study of individuals could tell to what extent such fluctuations enter into the history of every node. Protocol 5 illustrates such a history. The protocol has two other features of special interest. One is the acne, which, according to the work of Bloch,¹⁶ and Michael,¹⁷ is now believed to be part of the phenomena of normal adolescence; it is essentially an hypertrophy of certain elements of the skin under the influence of an endocrine factor closely related to the others causing the growth-acceleration of puberty. The other feature in this case was the athletic build and manly behavior of the subject. It might be sup-

posed that the occurrence of very large nodes and mild gynecomastias would be associated with asthenic constitutions or effeminate tendencies. Our data in general lend no support whatever to this supposition, which would conflict particularly with the following case (protocol 5). There are many reasons for believing that the mammary hypertrophy with which we are concerned is caused by a hormone from the testes; that this is true at least for the rat is shown by the remarkable observations of Selye et al.¹⁸ and Astwood et al.¹⁹

PROTOCOL 5

History of Boy L 103. Date of birth: 1922-I-5.			
Date of examination.....	1935-X	1936-IV	1937-III
Age (years and months).....	13-9	14-2	15-0
Weight (lbs. and quarters)...	123-0	128-0	153-2
Height (inches and eighths)...	62-6	64-1	67-2
Hair: Pubic	++	++	+++
Axillary	—	—	—
Facial	—	—	—*
Testes: R (diameter in cm.)...	2.29	2.55	2.50
L (diameter in cm.)...	2.37	2.71	2.40
Mean = $M = \frac{1}{2} (R+L)$	2.33	2.63	2.40
Cube of M	12.65	18.19	13.82
Subareolar nodes, right.....	++++**	++	++++§
left.....	++++	++	+++
Nipple-heights (mm.) right...	2.8	0.3	6.3
left....	1.0	—0.6	1.8
Voice	L	L	L
Weight-increase (lbs. per mo.) ....	...	0.83	2.79

*Boy now has a severe acne.

**This node is especially large, firm, and definite; diameter about 1.2 cm.

§Both these nodes are hard. Right node has a diameter of 2.6 cm.; boy says it was biggest in December, 1936, and used to hurt in cold weather. Left node has diameter of 1.4 cm.; it used to hurt too, was also biggest in December, 1936, but has never been as big as that on the right.

What is Mastitis Adolescentium? The transient hypertrophy of the mammary gland in newborn babies, with occasional secretion, is a familiar phenomenon. The glandular tissue becomes palpable as a firm, circular node, and such nodes have been examined microscopically after surgical removal. The tissue is said to be indistinguishable from that of carcinoma in the adult breast. Numerical data on the frequency of such swelling, and references on the subject of "witches' milk," are given by Lyons.²⁰ The swelling subsides after a few weeks, and the tissues involved must be supposed to rest until the approach of puberty.

The reappearance of the node probably occurs about 5 years earlier in girls than in boys.^{4, 21, 22} In pubescent boys the node rapidly enlarges to a diameter of more than 1 cm., and is very likely to be tender. This stage begins roughly at the

age of 14, and lasts more than a year. Since we believe this to be a normal structure, we are not surprised to find it resistant to treatment by massage and hot water bottles. The "tumor" and "dolor" are the only features that might justify calling this process inflammatory. Zappert proposed the term "schmerzhaftes Brustdrüsen-schwellung grösserer Kinder." The term "mastitis adolescentium," as pointed out by Zappert, should not be applied to this perfectly normal condition, and should be reserved for the rare instances in which actual suppuration of the glandular mass occurs. A moderate hyperemia, and the finding of slight infiltration of round cells in the microscopic sections, are also part of the picture, and do not suffice to justify the diagnosis of chronic mastitis. The word "mastopathia" used by some authors²³ has the disadvantage that to many readers it suggests abnormality or disease.

The fact that in a given boy the two nodes do not always appear simultaneously can give rise to the impression that metastasis has occurred from one side to the other. The fact that two or more boys of about the same age are likely to develop the nodes in close succession has in one instance that we know of given rise to the impression that an infection had been transmitted from one to another.

In some individuals the regression of the nodes proceeds so fast that they are no longer palpable by the age of 17. In others they persist beyond the age of 30. In a few apparently normal boys the node enlarges to a softly nodular or glandular mass which may measure more than 6 cm. in diameter and apparently must be considered a normal gynecomastia. Our own data give no information as to the course of this condition, but Stümcke,⁸ who observed one mass measuring 4½ inches in diameter, states in two places that all the enlargements observed by him regressed spontaneously. The relation of gynecomastia and mazoplasia to other changes in the breast are discussed by Lockwood and Stewart in a recent article.²⁴

Mastalgia associated with the appearance of the subareolar node must be looked upon as an instance of normal pain. It is most often felt during exposure to cold or after the chafing of garments. The sensitiveness of the nipple may be persistent; one man, age 25, still avoids carrying pencils in his breast-pocket because they

irritate his nipples. Three men have volunteered the information that at puberty they were able to observe a little mammary secretion, in one instance sufficient to moisten the clothing. Unless either pain or secretion occurs to fix the matter in the subject's mind, the episode of the subareolar node, like many of the other phenomena of puberty, either fails to attract his attention or else is forgotten promptly.

SUMMARY

On the basis of approximately 1000 examinations of normal boys and men between the ages of 9 and 45 it is shown that the appearance of a palpable mass of mammary tissue under each nipple is an integral part of the process of puberty. This glandular mass we have proposed to call the subareolar node. It is frequently tender for periods of many months. At times the nodes are asymmetrical. The subsequent involution of the node shows great individual variations, both as to promptness and completeness. At the one extreme are presumably temporary gynecomastias, which we saw three times in subjects between the ages of 14 and 18 without any other signs of endocrine abnormality; at the other extreme are youths in whom no palpable vestige of the node remains at the age of 17. In our series, only 12 out of 84 men in the 20.5-year age-group still had palpable vestiges of one or both nodes.

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CLINICAL ASPECTS OF NEPHRITIS

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Over one hundred years ago, Richard Bright¹ distinguished a small number of patients from all others at Guy's Hospital by his discovery that their urine contained notable concentrations of protein. In this group he observed a significantly high incidence of edema and cardiac enlargement, but in general the symptomatology was quite variable and, with the exception of albuminuria, no clinical constant was found. He established the fact that in every case gross structural abnormalities existed in the kidneys and that, although the renal lesions varied in outward appearance, they were all nonsuppurative and bilateral.

Today we still begin where Bright began, with the observation that the urine contains protein, and we end where he ended, with the study of the structural abnormalities in the kidneys and other tissues. We still find constant only the association of certain urinary and renal changes and our minds are often as divided and uncertain as was his in regard to the question as to whether these patients are victims of one disease in various stages and intensities, or are suffering from different diseases of diverse etiology. This paper, then, is presented with the hope of adding to the

clarity and completeness with which the variable courses of the different types of renal disease can be pictured, thereby lessening the avoidable error of diagnosis and prognosis.

There is still no unanimity of opinion concerning either the nomenclature or classification of the group of renal diseases known as nephritis. An etiological classification, although highly desirable, cannot be used because of the present lack of knowledge of the cause of many varieties. A simple anatomical classification is also unsatisfactory because the lesions are usually too diffuse, because intermediate and mixed forms are frequent and because post-mortem examinations frequently fail to demonstrate comparable distinctions. The pathologist cannot give a decisive answer. After all, his observation is limited to one moment of time, and that moment the last of life, when the original simplicity of the lesion is often obscured by terminal complications, or when the disease is so far advanced that little but fibrous tissue remains and the nature of the primary reaction can be only doubtfully surmised. Furthermore, nephritis in all its forms is always very much more than a disease of the kidneys, and no classification that is based only on the nature of the renal lesion can possibly be adequate. Vascular abnormalities and changes in the other tissues are often more important than the structural or functional changes in the kidneys, but our clinical knowledge of these extra-renal lesions is, as yet, almost negligible. The question, therefore, seems to be one for the clinician who can watch the development of the disease from beginning to end.

The older school of writers, as exemplified by the Osler² period, simply divided nephritis into acute and chronic forms. Chronic nephritis was further subdivided into parenchymatous and interstitial varieties and the latter again split into the primary and secondary contracted kidney. The first real effort at an inclusive classification was that of Volhard and Fahr³ in 1914. They not only introduced order and clarity into the classification of the nephritides but were also able to satisfactorily relate the clinically defined conditions to the anatomical changes in the kidneys. Their publication was followed by many others, the most noteworthy of which are probably that of Addis⁴ in 1925, which is based on the examination of the urinary sediment, and

that of Christian⁵ in 1931, which is purely clinical. However, all, in one way or another, have been forced to recognize three outstanding syndromes. These are in the main:

1. Cases characterized by hematuria and the presence of blood casts in the urine. Hypertension and nitrogen retention are usual in the acute stages and regular in the advanced stages.

2. A symptom complex characterized by edema and massive albuminuria with little or no evidence of cardiovascular disturbances, hypertension or nitrogen retention.

3. Cases in which the general vascular system is diseased or disturbed and arterial hypertension is regularly found before there are manifestations of renal disease.

These three forms are apparently etiologically and pathologically distinct and different and by recognizing them and following their course the clinician can, during life, anticipate with considerable accuracy the major pathological changes occurring in the kidneys. When the relation of these syndromes to the terms used in the different classification is compared, as in the accom-

Addis, particularly where it seems desirable to stress the anatomical changes in the kidneys.

HEMORRHAGIC NEPHRITIS

(Glomerulonephritis)

The characteristic feature of this type of nephritis is the occurrence of abnormal numbers of red blood cells and blood casts in the urine. Hypertension and nitrogen retention are usual in the acute stages, regular in the terminal stages. The hematuria may be slight or so profuse that it suggests hemorrhage. It may be acute, intermittent or chronic. Blood casts are pathognomonic. They vary in color from lemon yellow to dark brown. In some of those of lighter color red blood cells may be seen incorporated in the matrix, but the majority are only fused orange colored masses. In addition, the urinary sediment contains epithelial cells and considerable numbers of pus cells.

It is generally conceded that these cases are caused by streptococcus infections, usually originating in the mouth or respiratory tract, and that their subsequent course is due to the exacer-

RELATION OF NEPHRITIC SYNDROMES TO TERMS USED IN DIFFERENT CLASSIFICATIONS

SYNDROMES	OSLER	VOLHARD-FAHR 1914	ADDIS 1925	CHRISTIAN 1931
1. Hematuria, hypertension and nitrogen retention. Acute, chronic and terminal stages.	Acute nephritis. Chronic interstitial nephritis (Secondary contracted kidney).	Glomerulonephritis	Hemorrhagic Bright's Disease	Nephritis without edema.
2. Renal edema and massive albuminuria. Hypertension and nitrogen retention absent or minimal.	Chronic parenchymatous nephritis.	Nephrosis.	Degenerative Bright's Disease	Nephritis with edema
3. Hypertension and general vascular disease precedes renal changes.	Chronic interstitial nephritis (primary contracted kidney).	Nephrosclerosis	Arteriosclerotic Bright's disease	Essential hypertension and renal arteriosclerosis progressing into chronic nephritis

panying table, it is obvious that the differences are not too great. This is particularly true in regard to the Volhard-Fahr and Addis nomenclatures, which are practically interchangeable. In the following discussion the terminology of Addis is followed because it is becoming increasingly accepted, because it is simple and because it avoids controversial terms. The terms of Volhard and Fahr are given in parentheses and are occasionally used alternately with those of

bation, recurrence or persistence of such infections. Tonsillitis is by far the most common single cause. Other factors which are frequently listed, such as exposure to wet or cold, probably act only indirectly by way of infection.

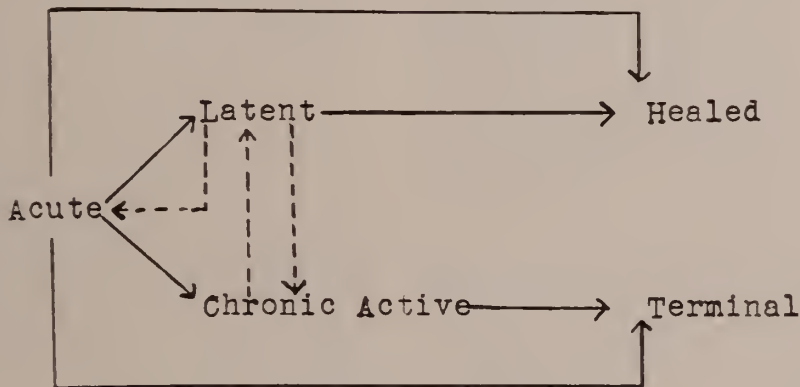
The primary and outstanding pathological change is an inflammatory destruction of the glomeruli. Histologically, these show hemorrhage, infiltration with polynuclear leucocytes, endothelial proliferation, lobulation and hyaline

transformation. The tubular epithelium is usually swollen and granular and the lumen of the tubules is often greatly encroached upon or filled with exudate and cellular debris. The interstitial tissue, as a rule, shows very little change, but at times there is edema, hemorrhage and some cellular infiltration. In the acute stages the kidney is larger than normal because of congestion, edema, hemorrhage and swelling of the epithelial cells. Its color varies from pale translucent gray to yellowish gray to red. Often it is mottled. These colors depend upon the amount and distribution of the edema, congestion and hemorrhage. In the subacute stages the kidney is usually quite white in color, though it may retain some of its mottling. As the process continues and more glomeruli become destroyed and fibrosed, there are increasing secondary changes, chiefly interstitial proliferation and fibrosis, with degeneration or atrophy of the tubules associated with the destroyed glomeruli. With this the kidney becomes smaller and firmer, with a roughened granular surface and more or less adherent capsule, until finally there results the typical secondarily contracted kidney. At this time the

The course of the disease is quite variable and, as has been said, is probably determined by the healing, persistence, exacerbation or recurrence of the streptococcal infection which caused it. Thus the initial acute process either heals, improves to a latent stage or progresses through an intermediate phase to a terminal stage with hypertension and nitrogen retention. Addis has pictured this course diagrammatically about as follows⁶:

The more usual changes are indicated by the arrows with the unbroken shafts. The dashed arrow indicating a change from a chronic active to a latent state represents a favorable outcome which is extremely uncommon. The reverse arrow leading backward from the latent to the acute stage indicates an exacerbation. Less frequently an exacerbation may cause a change from the latent to the chronic active state.

In the progress of the disease the different stages are, of course, not sharply marked off from one another. The transition periods during which the disease passes from a condition frankly belonging to one stage to that clearly belonging to the next may cover weeks, or even months. Like-



renal architecture is so destroyed that the differentiation between the cortex and medulla is indistinct or lacking and there are obvious arteriolar changes. In those cases which come to post-mortem as a result of a purely renal death, i.e., uremia, practically all the glomeruli are destroyed. However, the amount of gross anatomical contraction depends more upon the duration of the disease than upon the degree of functional damage the kidney has suffered. Those dying early, e.g., those which pass directly from the acute to the terminal stage, show kidneys of the large white type.

wise, the boundaries between the different stages, particularly between the chronic active and terminal stages, is often broad and hazy. Nevertheless, the disease in its progress does pass through periods clinically so different that they have at times been described as different entities and so the convenience of using concise names to define them seems justified.

The *acute stage* of hemorrhagic nephritis is familiar to all of us, with its smoky urine, slight to moderate rise in blood pressure and slight generalized edema. However, and this is not infrequent, its manifestations may be so slight that

they escape notice or are forgotten. When the streptococcal infection has run its course and disappeared, as for example in scarlet fever, there is a rapid subsidence in the activity of the renal lesion and ultimately healing with a defect that is compensated by hypertrophy. The prognosis here is usually good. Few patients die. Most children recover completely. In adults slight urinary changes often continue. In general patients who have recovered seem to have no real increased tendency to develop nephritis in the future. However, we have no way of foretelling its course. During the acute process, neither the degree of hematuria, hypertension, nitrogen retention or anemia seem to have any bearing on the ultimate outcome. On the other hand, those patients who show a plasma albumin deficit or who do not show definite and continued improvement at the end of four months usually do not recover but pass into one of the other phases, usually the chronic active or terminal.

If there is a continuance of focal streptococcal infection the individual tends to pass into the *latent stage*. Here their general health is usually very good and the only findings are a slight proteinturia and an abnormally high number of red blood cells and a few blood casts in the urinary sediment. In fact, even the urine may be passed as normal unless it is concentrated. Under these conditions the slowly progressive glomerular destruction is met by a steady compensatory hypertrophy. Such an equilibrium may last for years. Finally the process may be arrested with healing and recovery, or it may progress.

If there is a continuing streptococcal infection or repeated mild exacerbations of such an infection the *chronic active stage* results. This is characterized by a marked increase in the proteinuria and in the number of casts, with the appearance of waxy casts and fat droplets in all the hyaline casts. In untreated cases there is marked edema. If, as so frequently happens, there is no increase in the blood pressure, the only method of differentiating such cases from so-called genuine nephrosis is by the large number of red cells and the finding of an occasional blood cast in the urine. The prognosis in these cases is not good. It is extremely rare for them to revert to the latent stage or to recover. Practically all of them present the same melancholy tale of progression with death, usually in less than three years. In these cases the presence of hypertension means

arteriolar sclerosis. This hypertension has no definite prognostic value but it does mark the case as one in which death may occur from circulatory failure or cerebral hemorrhage before renal failure has reached a lethal degree.

The *terminal stage* is reached when the destruction and fibrosis of the glomeruli has reduced the amount of secreting tissue to less than one-third of its original amount. With this there is hyposthenuria, nitrogen retention and usually hypertension. The character of the urine also shows marked changes because when a glomerulus is destroyed urine no longer flows down its tubule and so less albumin, blood and pus cells come from the shrunken kidney. Finally nothing of what was previously found remains and all the casts are renal failure casts. Many cases do not come under observation until this stage is reached. They may tell us that they have always been well and strong until they noticed an unaccountable weakness, or unexpected vomiting or sudden dimness of vision. Sometimes they remember a long past illness which might have been the initial stage, sometimes the history is clearer and more convincing, occasionally the transition has been recorded. The usual termination is in uremia. As a rule this occurs in less than a year, rarely in more than two.

DEGENERATIVE NEPHRITIS (Nephrosis)

The clinical characteristics of this type of renal disease are a heavy proteinuria and a tendency to edema which is usually massive in character. These are accompanied by little or no evidence of cardiovascular disease, hypertension, nitrogen retention or anemia. The urine contains large numbers of epithelial cells in various stages of degeneration, hyaline and fatty casts and doubly refractile fat droplets, but few or no red blood cells or other elements indicative of an active inflammatory process in the kidney. The outstanding constant abnormalities in the blood are a deficit in the plasma albumin, which is more often than not less than half of the normal four per cent, and an increase in the fat and cholesterol concentrations. In addition there is a reduced basal metabolism which is not affected by thyroid therapy.

In the majority of cases the etiology is unknown. Addis calls these cases "cryptic" and Volhard and Fahr "genuine." Other cases ac-

company or follow a great variety of infections, the most common of which are osteomyelitis, tuberculosis and syphilis. Still others may follow pregnancy, mercurial poisoning and jaundice. Out of the mass of literature one gains the distinct impression that degenerative nephritis is probably not a distinct entity like hemorrhagic or glomerulonephritis. Hence if one desires to apply the term nephrosis to this syndrome there can be no objection. No real agreement has yet been reached concerning the nature of the disease and both names represent convenient terms under which to group those degenerative conditions which affect the kidney parenchyma but which do not attack the vascular system. That the plasma albumin deficit is the predisposing and essential factor in the development of the edema has been amply demonstrated by the work of Starling,⁷ Epstein,⁸ Moore and Van Slyke⁹ and others. Practically the complete syndrome may be reproduced in dogs by repeated plasmaphoresis. The significance and mechanism of the low metabolism remains an unsolved puzzle. It has already been mentioned that this syndrome may appear in the course of hemorrhagic nephritis and Christian¹⁰ has long championed the view that these cases are merely a stage of that disease. This is certainly almost universally true of those cases occurring in adults in whom, if death does not intervene, there is a gradual shift in the clinical picture with decreasing edema, rising blood pressure and finally nitrogen retention.

The characteristic pathological lesions are degenerative changes affecting most markedly the tubules. Histologically there is intense fatty and hyaline-droplet degeneration of the epithelial cells, in comparison with which all other changes are insignificant. The lipid deposits which have been greatly stressed by some are probably secondary and unimportant changes, sometimes present, sometimes absent, which should be interpreted, not as a part of the degenerative process, but merely as evidence of reabsorption of fat from the urine in the tubule by its lining cells. There is usually some hyalinization of the glomeruli and rarely some scar formation. Macroscopically the kidneys are usually large and white; their capsule strips readily leaving a smooth surface. In the amyloid forms there are usually extensive deposits in the glomeruli as well as in the tubules. In late stages, particularly in those which have shown hypertension and

nitrogen retention during life, there is increasing involvement of the glomeruli and usually some retraction.

Degenerative nephritis is a relatively uncommon form of renal disease. Most of the cases occur in children. Its onset is usually insidious, it progress chronic. It may last from a few months to many years. A few cases undoubtedly recover, some entirely. The great majority, however, progress and usually die in twelve to twenty-four months of an intercurrent infection, the most common form of which is a pneumococcus invasion of their ascites. If they do not recover or die of an intercurrent infection, they progress and as they progress there is a gradual shifting of the clinical picture from that of nephrosis to that of chronic hemorrhagic or glomerulonephritis.

ARTERIOSCLEROTIC NEPHRITIS

(Nephrosclerosis)

In this group of cases the general vascular system is diseased and hypertension precedes any serious disturbance of the kidneys. The most striking clinical features are marked hypertension, cardiac hypertrophy and the presence of a small amount of protein and a few hyaline casts in the urine. The chief symptoms are usually referred to the extrarenal arterial system, particularly of the brain and the heart. Hyposthenuria and nitrogen retention may occur but as a rule renal failure is only a terminal event. If edema is present it is always cardiac in origin.

These cases are of great importance because they represent by far the most frequent form of nephritis, though they do not appear as such in the literature. But so far as the kidney is concerned its importance is of a negative character, for when the diagnosis has been made it is no longer necessary to consider the renal lesion as a factor in the management of the patient. These are the patients with hypertension who are often told that they are suffering from "chronic interstitial nephritis" and who constantly live in fear of death in a uremia that never occurs.

A good deal of knowledge has been acquired, especially in recent years, concerning the mechanism of hypertension, but practically nothing is known of its fundamental etiology.

The primary pathological changes are in the small arteries and arterioles. These show intimal hyperplasia, hyalinization and fatty degenera-

tion. As a result their lumina are usually narrowed and often obliterated. Thrombosis is common. Varying proportions of the glomeruli show hyaline and fibrous changes but as a rule the majority of them are intact. The tubules also show changes which are largely atrophic in type. The connective tissue is always increased. Usually this occurs most markedly in bands enclosing atrophied glomeruli and tubules with intervening portions where the connective tissue is less prominent and the renal structure fairly normal. It is this connective tissue increase which gave to these kidneys their old name of chronic interstitial nephritis. Its overgrowth, however, is secondary to the nutritional changes arising from the vascular lesions. Grossly the kidneys are small, shrunken, firm, dark reddish brown in color, with scarred coarsely granulated surfaces. Their capsule is adherent and when stripped leaves a roughened, pitted surface where connective tissue strands have torn out bits of the parenchyma. On the cut surface the cortex is thinned and the usual markings hazy and indistinct. Accompanying these changes in the kidneys there are always changes in the arteries in the other parts of the body and almost always cardiac hypertrophy, which is usually marked.

The beginning of this form of nephritis is always insidious and the actual onset is rarely recognized. Most cases begin in patients more than forty years of age but cases do occur at all ages with decreasing frequency down to early childhood. These patients do not recover though the duration of the disease varies from months to many years. Sudden vascular accidents, usually to the heart or brain, may occur unexpectedly and completely change the prognosis by interrupting an otherwise almost imperceptible progress.

Treatment. Academically the treatment of nephritis should be considered from the same angles as any other disease, namely the prophylactic, curative and palliative standpoints. Actually the problem is not simple.

The prophylaxis of hemorrhagic and perhaps degenerative nephritis is the avoidance of infection, particularly streptococcal infection. Just how this may be accomplished is a matter of individual opinion. In the fight against bacterial disease the least progress has been against the streptococcus group. Most vaccines and serums have been disappointing. Nevertheless some ad-

vances have been made, e. g. against scarlet fever, and these should be employed. In regard to arteriosclerotic nephritis prophylaxis seems to consist of the selection of good ancestors, the avoidance of diabetes and obesity, worry and nervous strain and the establishment of healthy habits of life. Just how this is to be done is not clear.

The previous remarks apply equally well to so-called curative treatment. Definite foci of infection undoubtedly need to be eradicated as possible causes of progression, but the indiscriminate removal of slightly diseased or practically sound teeth or tonsils has no justification. The disturbing effects of operative measures must be taken into account and tonsillectomy, certainly in adults, is to be regarded as a major operation from which the patient recovers only after weeks.

In the actual treatment consideration must be given not only to the kidneys but also to the heart and peripheral blood vessels. Though there is an admitted pessimism as to the results of this treatment still judicious regulation of the lives of these patients with respect to physical and mental activities, diet, etc. and the treatment of the various incidents of the disease as they arise, does accomplish much for their comfort and, in those who cannot recover, prolongs their period of reasonable activity.

There is no medical treatment or therapy for the renal condition itself and for hypertension, at least at the present time, medicines are of no real value, except possibly the various sedatives. All cases do better in a warm equable temperature and all should avoid physical and mental stress and strain. All acute cases and all those showing evidence of activity or progress should be treated by prolonged rest in bed. In fact, nothing except this seems to have any effect on the bleeding of hemorrhagic nephritis. However, in chronic cases, particularly those of the arteriosclerotic type, some exercise is advisable, provided only that it does not produce fatigue which persists.

In addition to these general hygienic measures the most important factor in the treatment of nephritis is the diet. Previous to the last two decades protein restriction in all types of nephritis appears to have been fairly general. Such restriction arose as a logical deduction from the facts that protein metabolism produced urea, and that in renal disease the ability of the kidneys

to excrete urea was diminished. Hence it appeared desirable to reduce the work of the kidneys by lowering the protein intake and thereby the amount of urea that had to be excreted. However, following the recognition in 1905 by Frederick Mueller of the purely degenerative type of nephritis, in which there is maximum proteinuria without nitrogen retention, the belief has been steadily gaining ground that in this type of disease protein consumption should be encouraged rather than restricted. Epstein¹¹ was the first to advocate this change in which he was followed by many others, so that at present there seems to be a fairly uniform agreement among clinicians that in this form of the disease a more or less generous protein diet is indicated. These patients suffer not only from albumin deficit in the plasma but as a rule from general wasting of the tissues. They require, for regeneration of plasma albumin and for the maintenance of general equilibrium and normal mass of body tissue, diets containing more protein than would keep a normal individual fit. In this type of the disease the chief incapacitating factor is the edema. The most urgent need of the patient is a sufficient increase in plasma albumin to bring the edema under control and frequently such an increase occurs when a patient previously on a low protein diet is put for some weeks or months on a regime containing 90 to 120 grams of protein a day. Forced feeding of larger amounts may, by causing digestive disturbances and general malaise, do more harm than good. Time is necessary for results because it is probable that restoration of serum proteins can be effected only after the depleted tissues have been satisfied. Although complete restoration of normal plasma albumin may be impossible as long as the disease continues, nevertheless the accomplishment of an increase of 0.5% may make the difference between complete incapacity and comparative well being. Similarly in hemorrhagic nephritis with edema and low plasma proteins it is advisable to give enough protein to cover the usual nitrogen requirements of the individual, and in addition a large enough surplus to replace the protein lost in the urine.

In cases of latent hemorrhagic nephritis there is obviously no need for restriction of any of the elements of the diet. Reduction of the diet in these cases leads only to malnutrition, anemia and decreased resistance. In some cases which

have been on a restricted diet, a generous protein allowance (1.5 grams or more per kilo) has been followed by improved renal function. It is probable that these cases were in the course of a prolonged convalescence and that the diet affected, if anything, only the rate of recovery. The point is that a more generous protein allowance may accelerate rather than retard convalescence. Certainly a slight excess may be given without danger of augmenting the protein metabolism or increasing the nonprotein nitrogen of either the blood or urine.

There remains the question of the protein diet in those cases of more or less advanced nephritis, in which the most marked evidence of the disease is impaired renal function. Here there is usually no need to replace excreted protein or to regenerate plasma albumin, and one might logically assume that there is more need for sparing the kidneys work in excreting urea. Even here, however, I doubt that clinical evidence justifies forced protein restriction, though the literature is practically without data on which to base an opinion. A patient who, when consuming as much protein as his appetite dictates, has 100 mg. of urea nitrogen per 100 cc of blood, may, it is true, reduce the figure to 50 mg. when his protein intake is reduced to a minimum. But the reduction usually has no demonstrable effect on the course of the disease, and may be accompanied by an apparent loss of strength. One is surprised to see the degree of activity and well being maintained nearly to the onset of uremia by some nephritics who have escaped dietary regulation. It is my belief that we have as yet no criterion for the renal state that requires protein restriction, and that the condition of nephritic patients in general would be happier and the progress of their disease no more rapid if their diets were regulated in accordance with the usual metabolic requirements of persons of their size, age and activity, with due regard to the state of their digestive organs and general condition and without regard to the logical but clinically unproved assumption that protein restriction should accompany retarded urea secreting ability. I do not mean that protein should be forced on such patients but that they should be permitted ordinary amounts to the limit indicated by their appetites, unless digestive disturbances or other practical causes indicate the desirability of restriction.

It is too little recognized that chronic nephritis is a wasting disease, perhaps because all the causes of protein wastage and malnutrition are not clear. For prolonged treatment—and, as this is a chronic disease, treatment must be prolonged—no diet can be satisfactory that does not suffice to maintain nitrogen equilibrium. As in the ordinary course of the disease protein metabolism does not appear to differ from normal, this cannot safely be estimated at less than about 1 gram of protein per kilo of body weight. Ten to twenty grams of additional protein should then be provided to replenish the wasted tissues that are almost uniformly present. In considering these additions we must remember that protein used to build up body tissue and that excreted in the urine does not enter into nitrogen catabolism and presumably cannot influence blood non-protein nitrogen. During exacerbations of the disease, during periods of infection and when uremic symptoms are present protein foods may not be well tolerated and may have to be curtailed. In all these conditions protein catabolism appears to be increased. At any rate, patients on nearly protein-free diets are consuming their own proteins, a process that cannot be allowed to continue for very long without deleterious results. The second requisite of the diet is sufficient calories. To obtain minimum protein catabolism in normal adults 3000 or more calories have to be given daily and there is no reason to believe that the nephritic patient needs less. It may be that he needs more. It is surprising how much food some of these patients can take without any striking gain in weight. The second object then should be to furnish the total caloric requirement in the form of carbohydrate and fat. These high caloric, high carbohydrate and fat diets are especially indicated during the periods of exacerbation or infection just referred to.

In concluding this aspect of the subject one seems justified in saying that until a closer relationship is discovered between some constituent of the blood, or of the diet, and the progress of the disease or the production of uremic symptoms, it is better to individualize dietetic therapy and to direct it chiefly to the nutritive and digestive needs of the patient, with careful attention to its effects upon his clinical condition. A reduction in the level of the blood non-protein nitrogen may be considered a not undesirable

secondary aim. Any diet prescribed must be eaten. If the patient refuses to eat, every effort should be made to alter the diet so as to remove the objectionable features. To permit any considerable undernutrition is more serious than to give foods theoretically undesirable. If the patient begins to vomit we must concentrate on getting into him food of any sort that will be retained, in order to decrease the breakdown of tissue proteins.

The second feature of the diet that needs to be considered is its salt content. Apparently this is important in only two types of the disease; those with renal edema and those with severe impairment of renal function. In those cases without a tendency to renal edema and without serious impairment of kidney function there is as a rule no appreciable change in the electrolyte pattern of the blood or body tissues. In the nephrotic type of patient while the tendency to edema formation per se is undoubtedly not only referable to but also proportional to the serum albumin deficit, mineral analyses of edema fluids show that retention of water without sufficient sodium salt to form a solution approaching isotonicity with normal body fluids does not occur. For edema to develop, then, there must be sufficient sodium salts present to permit the formation of an isotonic solution. Thus edema formation is in a way largely proportional to the salt content of the diet. The critical point in the serum albumin level below which edema almost always occurs is approximately 2.5%¹² Below 2% edema can be prevented only by severe salt restriction. As it falls lower the difficulty of eliminating edema by treatment increases. If desirable the sodium salts in the diet may be replaced by those of potassium. Potassium salts, in contradistinction to the corresponding sodium salts, do not aggravate edema and may even induce diuresis. In the later stages of nephritis the disturbances in the electrolytes seem to be more nearly connected with the degree of renal impairment than the type of renal disease. When hyposthenuria sets in and the kidney loses its power to concentrate chlorid in the urine it also loses its power to conserve the salt supplies of the body by the cessation of chlorid excretion. When this loss has resulted in depletion of the salt supplies of the body as a whole it is in turn followed by loss of water and dehydration. At this stage salt restriction seems irrational. The

tendency to retain salt and develop edema is seldom evident unless there is circulatory failure. Certainly when vomiting sets in the parenteral administration of large quantities of saline solution is a more rational procedure.

The third important feature of the diet is its fluid content. Patients with nephritic edema can secrete water in about the same time as a normal person. Furthermore, the absolute quantity of water in the blood stream does not appear to be altered. In other words the blood does not share in the edema. If water does not accumulate in the blood the kidney cannot be held responsible for the abnormal retention of water. This conforms with what we know of the nature of renal edema. Nor do many of these patients have appreciable nitrogen retention. For these reasons most of them can be allowed the usual amounts of fluids, certainly enough for their comfort and an adequate urinary output. In those cases in which diminished renal function has reached a stage where there is nitrogen retention special efforts should be made to give enough fluids to keep the urine volume up to about 3000 cc. In general it may be said that whether or not the concentration of non-protein nitrogen rises or falls in the blood depends upon the rate of production of nitrogen metabolites, the relative speed with which water and nitrogen can be eliminated, and the amount of water available for diuresis. However, the power of the kidneys to concentrate nitrogen metabolites is limited and the limit beyond which, even in nephritics, diuresis no longer increases their excretion seems to be about three liters a day. Usually, for this purpose, the administration of large amounts of fluids by mouth is sufficient. It must, however, be appreciated that it is the volume of urine produced and not the volume of fluid taken, that is important. If, because of vomiting or for any other reason, it is impossible to secure a large enough intake by peroral administrations, subcutaneous or intravenous fluids should be given. If oliguria develops as a result of heart failure, reduction of fluid intake should be made only with the greatest caution. In these cases if circulatory compensation cannot be established by rest and digitalis the outlook for the patient is desperate.

Acidosis is rarely a matter of great concern in nephritis. Though it may occur at any time, it is usually negligible except in the terminal

stages of the chronic progressive forms of the disease. The chief factors in its production are the loss of the ammonia producing powers of the kidneys and the excretion of fixed bases. It varies greatly in severity but in extreme cases may attain a severity that rivals the most profound diabetic acidosis. It is the one form of acidosis in which bicarbonate seems to be indicated because the power of the kidneys to readjust the acid pattern by the selective excretion of ammonia and bicarbonate is impaired. However, the only certain benefit of alkali administration is relief from the distress of dyspnea. It is doubtful whether such therapy prolongs life for more than a very short period. Either the acidosis recurs or death follows from the other effects of the disease.

Diuretics are usually of little value in nephritis if they are not directly contraindicated. True nephritic edema is essentially an extrarenal condition not related to the water excreting powers of the kidneys and consequently is usually unaffected by diuretics. The purine and xanthine derivatives are almost always ineffectual. Ammonium chloride and other acidifying salts should usually not be given because of their tendency to produce acidosis. The mercurial preparations act directly on the kidneys and may produce an irritation which augments the nephritis. Both of these untoward results are likely to be more marked if there is no diuretic response. Nevertheless these remedies may be tried, either separately or together, and at times are efficacious. When used cautiously and intermittently I believe their dangers have been exaggerated.¹³ Urea is a natural diuretic and so has been advocated in nephritic edema and in cases with oliguria without marked azotemia. It is non-toxic and as much as 40 to 80 grams a day have been given with excellent results. It should, nevertheless, be given with caution and be discontinued if diuresis does not occur despite a moderate increase of non-protein nitrogen in the blood.

There are two other adjuncts to the treatment of nephritis which probably should be mentioned because they have been used extensively in the past and because their limitations are not yet fully understood. These are sweating and catharsis. If carried beyond very moderate limits both of these procedures are debilitating and both of

them remove from the body fluids which may well be essential to urine formation. There is no doubt that sweat contains both urea and other non-protein nitrogen elements, probably in concentrations slightly greater than those of the individual's blood, but there is no evidence that the sweat glands can serve as important channels for the elimination of catabolic nitrogen. If one compares the small amounts of nitrogen excreted by the skin with the large amounts of water which are known to be eliminated in profuse sweats, it is evident that the skin is a far less efficient organ for nitrogen secretion than even a badly damaged kidney. Ordinarily fecal nitrogen is quite constant regardless of the diet, provided the latter does not contain unusual amounts of undigestible nitrogenous material. For this reason it would seem that most of it is derived from nitrogenous material that is secreted or excreted from the bowel. Fecal nitrogen is increased in diarrhea but this increase seems to represent only unabsorbed food and the products of intestinal secretions which have been augmented by the irritating effects of catharsis. There is no evidence that this nitrogen is increased in nephritis, even when the blood non-protein nitrogen is high, and there is no reason to believe that any of it is catabolic in origin in the same sense as is urinary nitrogen.

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ACUTE SINUS INFECTION IN CHILDREN AND ADULTS

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The more common aspects concerning paranasal sinusitis are well known and recognized. The purpose of this paper is to emphasize or enlarge on some of the salient factors.

Dietetic requirement: Vitamin A as brought out by Amy Daniels and recently by Cody who, working on the effects of vitamin deficiency diets, maintain that Vitamin A in the diet is necessary to uphold the nutrition of the nasal, aural and tracheal mucosa. Vitamin A increases the resistance to upper respiratory infections in children.

Role of Allergy: An allergic state makes the individual more susceptible to acute sinus attacks. Cantor feels convinced that sinusitis in children is primarily allergic in origin.

Trauma or infection at birth or in infancy retards the development of the sinuses, hence they are more prone to acute and chronic involvement. Tanturri, in his experiments on animals, induced trauma of varying degrees and although the mucosa showed a remarkable tendency to recover even after severe trauma, he demonstrated that extravasations and inflammatory exudate extended into the centers of ossification. After three or four months the affected sinus was noticeably underdeveloped. Ingersoll and Carmody emphasize the influence repeated acute infections have on the development of the paranasal sinuses.

Presence of a *filtrable virus* concerned in the production of acute colds: On the basis of experimentally induced sinusitis in animals Linton concludes that purulent sinusitis in the human depends on the symbiotic action of a filtrable virus plus pathogenic bacteria, the former preparing the field for the reception of the latter.

Role of Swimming: Too little consideration is given by general physicians and not sufficiently emphasized by rhinologists. In the presence of a latent or recent cold swimming may precipitate an acute fulminating sinusitis. The writer has observed three such cases in the last few years with two fatalities. With lack of proper precautions swimming may produce a chronic state

Read as part of a Round Table Discussion, of Section on Eye, Ear, Nose and Throat, Illinois State Medical Society Meeting at Peoria, Ill., May 18, 1937.

of an existing latent or subacute type of nasal infection. Man has few structural adaptations for an aquatic environment; whereas diving animals are provided with a complicated musculature which forms a sphincter in connection with a special valvular apparatus for closing the naris and thereby protect their respiratory epithelium from the destructive action of water. Dean claims that prolonged chilling of the body from too long in the water or lounging around too long on a tile floor in a wet suit makes the bather more susceptible to infection of the paranasal sinuses. If a child is susceptible to upper respiratory upsets it is best to limit the time to 20 minutes stay in the water. Pool instructors and supervisors of boys and girls camps should be informed of the possible dangers and thereby better safeguard their charges.

Diagnosis: Campbell recommends the use of the nasopharyngoscope and considers it more important than roentgenograms. He uses a 2% cocaine on an applicator to shrink the mucosa. As a rule the diagnosis of sinus infection in children is obvious with a good history and routine rhinologic examination after constricting nasal mucosa with 1% aqueous solution of ephedrine or neosynephrin. A roentgenogram is advisable in the obscure or suspect foreign body case.

Complications apt to test the judgment and experience of the rhinologist. Infants and small children are more prone to 1. antrum empyema, 2. perforating ethmoiditis, 3. meningitis. Adults are more subject to 1. acute sphenoiditis, 2. acute exacerbations of a chronic sinusitis, 3. frontal sinus empyema, 4. frontal lobe abscess. The last two complications are apt to produce meningitis.

Among the serious complications occasionally observed and not usually emphasized are:

1. Pneumonia incidence: Campbell found acute nasal sinusitis present 100% in patients with pneumonia, ages 3 to 90. He thinks pneumonia with sinusitis more prevalent in infants because they are incapable of removing their nasal secretions; whereas, incidence of pneumonia is lower in older children and adults because they can remove excess nasal discharge. He recommends frequent use of suction in infants and children to lessen the occurrence of pneumonia.

2. Thrombosis of the cavernous sinus: Goldman reviewed 123 cases of thrombosis of the

cavernous sinus. In 4 cases (three of which were children), the origin was traced to the sinuses, ethmoids twice, ethmoid and maxillary once and ethmoid and sphenoid once.

3. Osteomyelitis of the maxilla and frontal bone. Muggia reported a case of purulent maxillary sinusitis in a new born infant in whom there developed a general septicemia with a circumscribed osteitis of the floor of the sinus which extended through the palate. Syphilis was excluded. He believes the infection was contracted through nursing a person with suppurative mastitis. Lederer traced the pathogenesis of osteomyelitis of the maxilla associated with a purulent rhinitis in an infant by serial histological sections. He noted that the nose is particularly rich in venous drainage; a septic thrombus proceeding by way of the diploic veins produces a retrograde infective thrombophlebitis.

4. Mental upsets with acute sinusitis: Jacod describes a woman aged 35 in whom during the course of an acute maxillary sinusitis there developed periods of mental confusion and dulness alternating with periods of frightful hallucinations. Puncture of the antrum yielded masses of thick cheesy pus followed by complete relief from mental symptoms. Several years later the patient experienced the same symptoms during another antrum attack. He ascribes the manifestations to toxic irritation in a person whose nervous system is particularly susceptible.

5. Meningismus: the writer reported in 1930 a case of meningismus associated with an acute bilateral maxillary sinusitis in a child 11 years old with prompt recovery on irrigating the antra.

Treatment: Acute paranasal sinusitis is a self limited disease and usually clears up if reasonable precautions are taken. The dictum "one week with medicine and seven days without medicine" holds good for most of the cases, Lederer puts it glibly in the statement "neither experience nor literature seem to solve the problem of therapy." "Hands off" policy or conservative measures suffice in the majority of cases to avoid spread of the infection.

The complications which require immediate surgical intervention are 1. a perforated infected sinus extending. 2. an acute empyema of a sinus draining poorly. 3. a persistent bacteremia associated with an acute sinusitis. 4. meningeal irritation. The degree of care of these complica-

tions depend on the judgment and experience of the attending rhinologist.

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THE COCCYGEAL GLOMUS, A POSSIBLE FACTOR IN COCCYGODYNIA

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The coccygeal glomus was first described by Luschka^{1, 2} in 1860 and for some time thereafter was frequently called "Luschka's Gland." It is a small spherical body arising from the middle sacral artery and is located at the tip of the

insertion of the levator ani muscle. The glomus lies just below this opening, imbedded in a fatty and fibrous connective tissue. It is a pinkish yellow spherical structure having a diameter of about 2 mm. in the human adult. The surrounding connective tissue seems to compress the soft tissue of the glomus and form a pseudocapsule. When this false capsule is sectioned or removed the glomus expands to a diameter of about 4 mm. Below the coccygeal glomus is the insertion of the anococcygeal ligament the fibers of which surround the structure and insert on the dorsal surface of the tip of the coccyx. The ligament and the levator muscle join anterior to the glomus, while the coccyx bounds the space posteriorly. This area was examined in four embalmed cadavers, in five fresh specimens removed at operation or autopsy and in the bodies of six new born infants. In the infants the middle sacral artery was first injected as a guide to the glomus, but because of its small size it was found in only two instances. Figures 1 and 2 were drawn from fresh specimens. These show the gross appearance of the glomus and its relation to the surrounding structures. Figures 3 and 4 are low and high

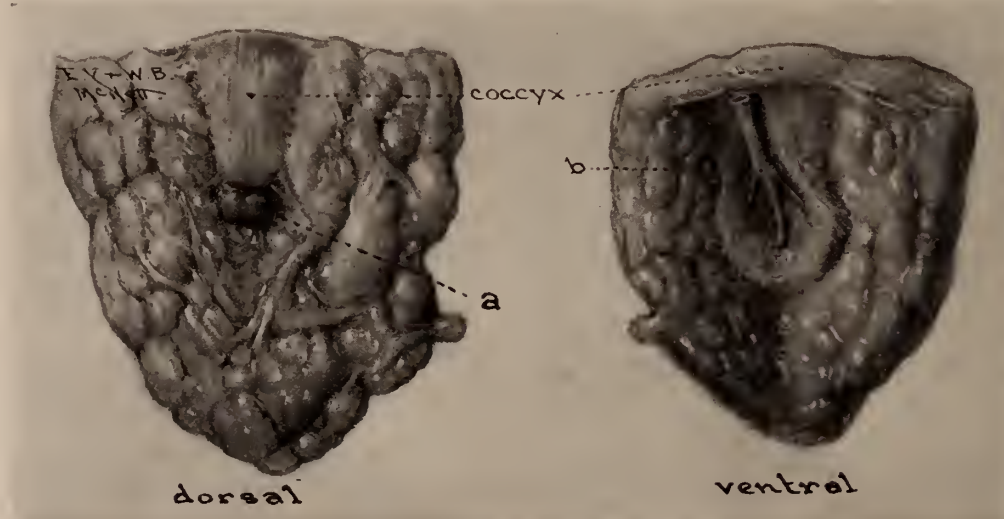


Fig. 1 Region of tip of coccyx showing Glomus
a—Glomus

Coccygeus.
b—Middle sacral artery

coccyx. The small artery supplying it passes downward along the middle of the ventral surface of the coccyx, under the coccygeal ligaments and through a small opening in the tendinous

power views of sections made from a fresh specimen removed at autopsy and show the histology of the lobule.

The coccygeal glomus is first seen in the embryo at the age of 52 days, when it develops as an outgrowth of the middle sacral artery.^{3, 4, 5}

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It increases in size and is well differentiated at birth. It was found by Walker⁶ in every subject he examined from the three months old fetus to the extremes of life. It varies only in that there is occasionally one main lobule and one or more secondary lobules.

The glomus coccygeus is an arteriovenous anastomosis and is composed of an afferent convoluted artery; the muscle cells in the tunica media are epithelioid in character.¹⁵ The convoluted portions of the vessel adhere and it is this union that gives the glomus its glandular appearance. The efferent veins are tributaries of the middle sacral veins and through them anastomose with the lateral sacral veins. The glomus has a rich sympathetic nerve supply from the pelvic sympa-

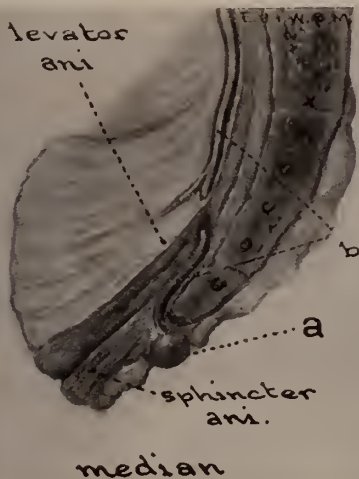


Fig. 2. Median section through coccyx to show the relations of the Glomus Coccygeus.

a—Glomus

b—Middle sacral artery

thetics.^{7, 8} The character of the connective tissue pseudocapsule, the vasa vasorum, the rich nerve supply and the character of the typical cells make the coccygeal glomus of the human an analogous structure to the caudal glomus found in the long tailed lower mammals. Similar structures are found in the bat's wing. In the human there are similar structures found in the skin, especially that of the nose, lobes of the ears, tips of the fingers and under the nails. These cutaneous arteriovenous anastomoses have been described and studied by Hoyer, Schumacher⁹ and Popoff.¹⁰

The function of the coccygeal glomus is unknown. It is certain that it has no function as a gland of internal secretion, as was at first

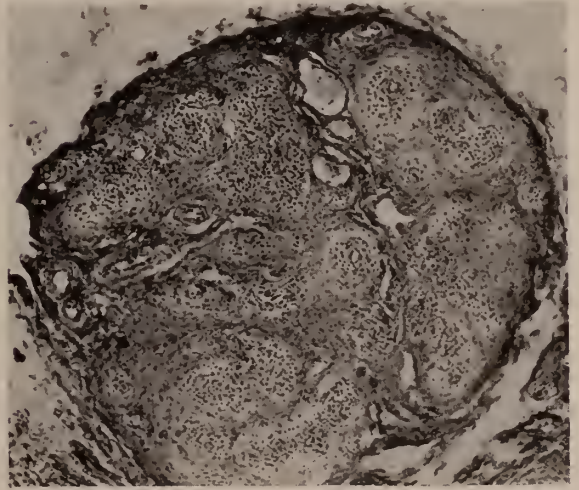


Fig. 3. Microscopic section through Glomus Coccygeus. (Low power) showing structure of the glomus.

thought. It is more likely a vestigial structure derived from the caudal glomus of the lower animals and persists in the human in the same manner that the appendix persists. The function of the cutaneous glomera, or arteriovenous anastomoses, have been studied by direct obser-

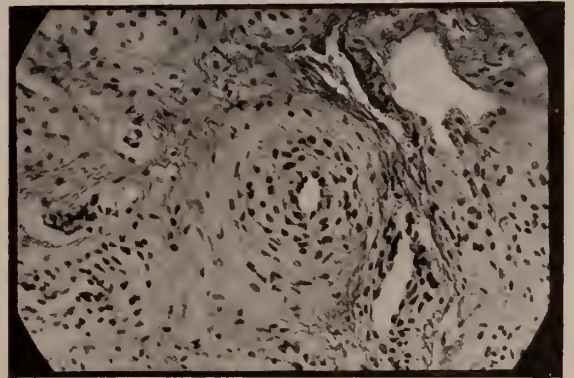


Fig. 4. Microscopic section through Glomus Coccygeus (High power) showing characteristic epithelioid cells.

vation by Grant¹¹ and the Clarks.¹² The coccygeal glomus cannot be so studied because of its concealed location. It is known that the removal of the glomus has no apparent effect. It has been suggested that the function of this structure, as well as the cutaneous glomera, regulates

local circulation, that it may be an organ of heat regulation, and may control the fluid content of the adjacent tissue spaces.

Tumors of the coccygeal glomus have been reported by Von Hleb-Koszanska¹³ and by Kofler.¹⁴ In these cases reported the tumors have been of a considerable size. Although these large tumors occur rarely, the smaller tumors similar to the angioneurofibroma or glomus tumors described by Masson, Lewis and Geschichter,¹⁶ Bailey,¹⁷ Horsley¹⁸ and others, may occur here more frequently than is generally recognized. These tumors of the cutaneous glomera are described as being small in size, bluish in color, may vary in both size and color with temperature and emotional states, and are characterized in most instances by severe pain that occurs spontaneously or on light pressure, and by a chronic course. These tumors are benign and are cured by local excision. On microscopic examination their structure resembles that of the normal coccygeal glomus.

Gant¹⁹ discussed a condition of the rectal or coccygeal region which was characterized by pain and which he considered due to an inflammation of the coccygeal glomus. It would seem more reasonable to suppose that pain at the tip of the coccyx associated with tenderness on direct pressure, in the patient with a movable coccyx and in whom movement of the coccyx was not painful, would be due to a glomus tumor of the coccygeal glomus.

Coccygodynia is a relatively uncommon condition. A. L. Smith²⁰ reported only 17 cases in a total of 15,000 patients. Under this term are included many conditions that cause pain in the coccygeal region: disease of the coccyx,²¹ arthritis of the sacrococcygeal articulation,²² trauma from parturition and direct trauma. Functional disorders of the perineal muscles have also been reported as causing coccygeal pain.²³ In many of the cases without ankylosis or deformity removal of the coccyx brings about cures. The usual technique of removing the coccyx would also remove the coccygeal glomus. If all removed specimens are carefully examined with this in mind more cases of true glomus tumors may be found.

SUMMARY

1. The normal anatomy and embryology of

the coccygeal glomus, or gland of Luschka, is described and theories of function mentioned.

2. The similarity of the coccygeal and cutaneous glomera is pointed out, and it is suggested that there are tumors of the coccygeal glomus that are similar to the glomus tumors occurring in the skin.

3. Glomus tumor of the coccygeal glomus may be a factor in certain cases of coccygodynia, and examination should be made of patients pre-operatively as well as of the removed coccyx with this condition in mind, in order not to overlook such a condition.

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PNEUMOPERITONEUM FOR PULMONARY COMPRESSION

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Introduction. All phthisiologists realize that a large percentage of pulmonary tuberculosis is not diagnosed until it has become far advanced and, often, hopeless. Of these far advanced cases, there are, however, a small number that will be considered suitable for the generally accepted methods of compression and collapse therapy. With the aid of such measures, these patients offer a fair chance of improvement and possible ultimate recovery. The remainder, on the other hand, are definitely unsuitable for the usual types of special treatment and, for that reason, other measures are given no serious thought. While all physicians prefer to treat patients who

Hippocrates,³ Sydenham,³ and others. In 1700 and 1800 Cullen² and Warren,³ respectively, went so far as to advise pregnancy in the treatment of the tuberculous female. In more recent years, K. Shaffer⁴ followed a series of tuberculous cases over a period of three to eighteen years. Of those who had been pregnant from one to seven times he found about 76% able to work, as compared to 53% of the non-pregnant group. The same writer⁴ noted, also, that the mortality of the pregnant was less than 50% of that of the control group. Suggesting that pregnancy may prolong life in some cases, Fishberg⁵ states that he has not seen a tuberculous patient die before delivery.

Personal Observations. I have observed, also, that during pregnancy, particularly the second and the third trimester, pulmonary tuberculosis is often favorably influenced. In figures 1A, 1B, and 1C we see a case before pregnancy, during the eighth month of pregnancy, and ten months



Figure 1A. (Left) X-ray November 27, 1931. Before pregnancy. Involvement of the right upper and the left lower lobe.

Figure 1B. (Middle) X-ray February 23, 1932. During pregnancy. There is definite improvement. Patient felt

so well that she did not return to the sanatorium after delivery.

Figure 1C. (Right) X-ray February 2, 1933. Ten months after delivery. Shows marked progression and patient appeared much worse.

have more favorable prognoses, particularly the minimal and the moderately advanced, we must not lose sight of the fact that one of our purposes is to reduce toxemia, alleviate symptoms, and prolong life.¹ With that thought in mind, as well as the possibility of some of these far advanced cases becoming suitable for some form of surgical collapse, pneumoperitoneum was utilized for pulmonary compression in this series.

Historic Note. For centuries it has been observed that pregnancy often has a transitory beneficial effect on the clinical course of pulmonary tuberculosis.² Such views were held by

after delivery. These x-rays require no comment. Figure 1A shows extensive involvement of right upper and left lower lobe. In figure 1B there has been definite improvement, whereas figure 1C shows marked progression of the disease in both lungs.

Other evidence bearing out the beneficial effect of an increase in intra-abdominal pressure are ascites,⁶ the use of abdominal binders,⁸ and pneumoperitoneum incidental to artificial pneumothorax.⁷ Irrespective of whether such improvement follows pregnancy or an increase in intra-abdominal pressure from some other cause, the

mechanism in each of them seems to be the same. In each case, there is interference with movement of the diaphragm and usually a variable degree of elevation of one or both of its leaves. From the present evidence, it is reasonable to assume that limitation of motion of the diaphragm is about as important as is the amount of elevation.

The Degree of Elevation of the Diaphragm. The amount of elevation of the diaphragm in any case will depend upon the following: First, the rigidity of the diaphragm; second, the intrathoracic pressure; third, the intra-abdominal pressure; and, fourth, the character of the tuberculous process. It has been said⁹ that with the aid of pneumoperitoneum the diaphragm may be forced upward to an extent possible only in an unusually successful phrenicectomy. In this series it was possible to measure the degree of rise fairly accurately in 41 cases. In these patients the amount of elevation was as follows: The right hemi-diaphragm from 0 to 4½ c.m., averaging 2.14 c.m.; and the left leaf of the diaphragm from 0 to 10 c.m., the average being 2.80 c.m. The greatest rise of the right hemi-diaphragm was 4½ c.m., obtained in one case. On the left the amount of elevation was uniformly greater, there being one of 7 c.m. and another of 10 c.m. See Table 1.

TABLE 1.

Right Hemi-diaphragm	Left Hemi-diaphragm	Right Hemi-diaphragm	Left Hemi-diaphragm
.00 c.m.	10.00 c.m.	2.00 c.m.	1.25 c.m.
.00 c.m.	1.00 c.m.	2.50 c.m.	1.00 c.m.
.00 c.m.	2.00 c.m.	2.50 c.m.	4.00 c.m.
.00 c.m.	1.50 c.m.	2.75 c.m.	2.50 c.m.
.50 c.m.	1.50 c.m.	3.00 c.m.	2.00 c.m.
.50 c.m.	1.50 c.m.	3.00 c.m.	3.00 c.m.
.75 c.m.	1.50 c.m.	3.00 c.m.	1.00 c.m.
1.00 c.m.	5.00 c.m.	3.00 c.m.	3.50 c.m.
1.00 c.m.	3.00 c.m.	3.00 c.m.	5.50 c.m.
1.00 c.m.	.00 c.m.	3.00 c.m.	3.50 c.m.
1.00 c.m.	3.25 c.m.	3.50 c.m.	2.50 c.m.
1.00 c.m.	3.00 c.m.	3.50 c.m.	2.50 c.m.
1.50 c.m.	3.50 c.m.	3.50 c.m.	1.00 c.m.
1.50 c.m.	4.00 c.m.	3.50 c.m.	2.50 c.m.
1.50 c.m.	1.50 c.m.	3.50 c.m.	1.50 c.m.
1.50 c.m.	3.00 c.m.	3.50 c.m.	3.00 c.m.
1.50 c.m.	4.00 c.m.	3.50 c.m.	3.50 c.m.
2.00 c.m.	4.00 c.m.	3.75 c.m.	.00 c.m.
2.00 c.m.	2.50 c.m.	4.50 c.m.	4.50 c.m.
2.00 c.m.	3.00 c.m.	5.00 c.m.	7.00 c.m.
2.00 c.m.	1.00 c.m.		

With the hope of increasing the degree of rise that had followed unsatisfactory phrenic paralysis, pneumoperitoneum was instituted in three cases. The amount of additional elevation thus obtained was 1:50 c.m. in the first patient, 3.00

c.m. in the second, and 3.75 c.m. in the third case. However, this additional rise of the diaphragm did not result in the obliteration of cavitation or, in other respects, appreciably influence the course of the disease. See Table 2.

This table shows the amount of elevation that was obtained from phrenic paralysis and the additional rise of the diaphragm following the institution of pneumoperitoneum:

TABLE 2

	After Phrenic	After Pneumoperitoneum	Additional Elevation
Case 5.....	4.00 c.m.	7.75 c.m.	3.75 c.m.
Case 6.....	3.00 c.m.	6.00 c.m.	3.00 c.m.
Case 7.....	1.50 c.m.	3.00 c.m.	1.50 c.m.

Feeling that further limitation of movement of the diaphragm might make pneumoperitoneum more effective, phrenicectomy or phrenicotomy was done in three cases that had been receiving this treatment for twelve to fifteen weeks with apparent benefit. In these patients phrenic interruption was followed by an additional rise of 2.50 c.m. in the first case, 2.75 c.m. in the second, and 2.50 c.m. in the third. In one of this group it was found possible to discontinue pneumoperitoneum after phrenic paralysis was done; in the second case hemorrhages recurred after pneumoperitoneum was stopped and were controlled after it was re-established; and the third patient was similar to the second, hemorrhages recurring and making it necessary to continue pneumoperitoneum. See Table 3.

This table shows the amount of elevation of the diaphragm obtained from pneumoperitoneum and the additional rise following phrenic interruption:

TABLE 3

	After Pneumoperitoneum	After Phrenic	Additional Elevation
Case 8.....	1.50 c.m.	4.25 c.m.	2.75 c.m.
Case 9.....	.50 c.m.	3.00 c.m.	2.50 c.m.
Case 10.....	4.00 c.m.	6.50 c.m.	2.50 c.m.

In both Tables 2 and 3 the measurements given are for the side of the diaphragm operated on.

Diaphragm measurements were also taken in a small series of tuberculous and non-tuberculous cases during the sixth to eighth month of pregnancy and the amount of elevation was as follows: The right hemi-diaphragm from 2.50 c.m. to 4.00 c.m., averaging 3.10 c.m.; and the left leaf of the diaphragm from 3.50 to 4.00 c.m., the average being 3.60 c.m.

The Ill-effects of Pregnancy on Pulmonary

Tuberculosis. The frequently disastrous effects of pregnancy on pulmonary tuberculosis are noted by observation of these patients over a period of from a few weeks to a few years. Such follow-up will show that a large percentage of these patients will reactivate their pulmonary disease sooner or later. This reactivation is, in my opinion, largely the result of sudden drop of the diaphragm following delivery. During the term of pregnancy, particularly the second and third trimester, these patients often show, as previously pointed out, definite clinical and radiologic improvement. Because of this feeling of well being, the importance of bed rest and other treatment¹⁰ after delivery frequently can not be impressed upon the patient.

The Therapeutic Application of Pneumoperitoneum for Pulmonary Compression. Realizing, as previously stated, that pregnancy often exerts a transitory beneficial effect on pulmonary tuberculosis, pneumoperitoneum was utilized for pulmonary compression several years ago.⁹ With the same observation in mind, as well as others to which I have referred, this treatment was instituted in a series of 55 cases and was maintained in 41 of these. Most of these patients were unsuitable for other types of compression or collapse therapy and their prognoses were uniformly unfavorable. Therefore, a high percentage of poor results was expected.

While the amount of compression obtained from pneumoperitoneum is limited, it was nevertheless occasionally sufficient to aid in the reduction of toxemia and in the control of hemoptysis. In a few cases small (a) cavities were closed and larger (b) cavities reduced in size. Where excavation was not favorably influenced the compression afforded by pneumoperitoneum has, in some cases, apparently stimulated fibrosis.

Indications: Pneumoperitoneum for pulmonary compression may be found of limited value in the treatment of unilateral or bilateral proliferative disease with small (a) or medium (b) sized cavities. For discussion, the indications for this type of compression may be sub-divided as follows: 1. It may be used as an independent procedure; 2. It may be preparatory to other forms of compression or collapse therapy; 3. It may supplement phrenic paralysis;¹¹ 4. It may supplement unilateral pneumothorax; and, 5. It may be found of some benefit in the treatment of

pulmonary tuberculosis complicated by tuberculous enterocolitis.

(a)—Two c.m. or smaller.

(b)—Two to three c.m.

As an independent procedure, pneumoperitoneum may be tried in those patients who have bilateral proliferative disease, who are not able to take bilateral pneumothorax, and who will probably not become suitable for other forms of special treatment. In a small percentage of this class of patients it has apparently helped to reduce toxemia and in the control of hemoptysis.¹¹

Where the disease is predominantly unilateral pneumoperitoneum may, in the same manner, aid in the control of symptoms and, in addition, promote healing contra-lateral involvement, thereby preparing an otherwise unsuitable case for surgical intervention. As will be seen later, three of this series were finally considered suitable for phrenic paralysis or for surgical thoracoplasty. The final results would, however, be regarded as poor.

Even more unsatisfactory results were obtained in three cases in which pneumoperitoneum was instituted after phrenic paralysis¹¹ and with the hope that additional rise of the diaphragm might retard progress of the disease. In spite of the additional elevation thus obtained, the disease process was apparently uninfluenced and all of these patients expired within a few months.

Similarly poor results were noted where pneumoperitoneum supplemented unilateral pneumothorax. In these cases bilateral pneumothorax could not be induced and it was thought that the compression afforded by pneumoperitoneum might benefit the contra-lateral involvement.

In the treatment of pulmonary tuberculosis complicated by tuberculous enterocolitis it seemed reasonable to assume that pneumoperitoneum may serve a two-fold purpose: First, that it should afford some degree of pulmonary compression and, second, that it would probably relieve, partially or completely, the lower abdominal pain that is so frequent in these cases. As will be seen later, the results in this group were also disappointing.

While I have not had occasion to utilize pneumoperitoneum in this way, it would seem, at least theoretically, that it might be of value at the termination of pregnancy in some tuberculous cases. By this means, the diaphragm could, for a

time, be kept at approximately the same level as before delivery, and later lowered gradually.

Contraindications: Although patients for this series were not selected, there are, nevertheless, definite contra-indications to pneumoperitoneum for pulmonary compression. Among these may be mentioned the following: 1. A patient who is in poor general condition; 2. A patient who is markedly dyspneic; 3. Exudative or acute miliary disease; 4. Large (c) cavities; 5. A rigid diaphragm; and, 6. Stiff walled cavities. These contraindications do not require comment.

The Technique of Pneumoperitoneum. In his paper on pneumoperitoneum in the treatment of tuberculous entero-colitis Binyai¹² covers the technique of pneumoperitoneum very thoroughly and anyone who is interested in this subject will do well to refer to his work.

I usually use the umbilical route, a field being chosen two finger-breadths or more from the median line and at the level of, or slightly below, the level of the umbilicus. The site selected is prepared as usual and the skin and subcutaneous tissue are infiltrated with $\frac{1}{2}$ to 1% novocain. With an 18 gauge sharp needle, introduced upward and inward, the deeper structures, particularly the peritoneum¹³, are well anesthetized.

A sharp pain, followed by lessening of resistance, is fairly good evidence that the needle has passed through the peritoneum. In order to exclude the possibility of a mesenteric vessel having been punctured, it is important that the plunger of the luer be drawn outward before an attempt is made to introduce air. Observance of this precaution will, I feel, practically eliminate the possibility of air embolism.

Other evidence that the needle is in the peritoneal cavity is a free flow of air, a manometric pressure below plus 6, and the absence of subjective symptoms. A marked rise in intra-abdominal pressure after the introduction of a small volume of air usually implies the presence of adhesions.¹³ In such cases the subphrenic route can sometimes be utilized advantageously.

Unlike artificial pneumothorax, a neutral, rather than a negative, pressure is noted when the umbilical route is used¹⁴ and before any air has been introduced. In that region of the abdominal cavity manometric oscillations are as a rule absent. Partially because of the absence of a negative pressure, as well as the infrequency of oscillations, in the umbilical region, Binyai¹⁵

now advocates the subphrenic route. Utilizing the subphrenic route, he has observed that a negative pressure was usually obtained and that manometric oscillations were present in 50% of his cases.¹⁶

(c)—Larger than 3 c. m.

Volume of Air: In all cases, except the first few of this series, treatments were started with small volumes of air and the amount gradually increased. The initial volume has usually been 200 c.c. and most cases have received 100 c.c. more at each refill until the maximum amount was reached. The latter is determined by intra-abdominal pressure, fluoroscopic and radiologic findings, and the control of symptoms. In this series the volume of air has ranged from 200 c.c. to 1250 c.c. per week, the average being 675 c.c.

Intra-abdominal Pressure: Closing manometric pressures have ranged from 0 to plus 14, the average being plus 4. In my opinion, high intra-abdominal pressures (above plus 5 or plus 6) should be avoided. As stated previously, unduly high pressures are frequently the result of adhesions.

Fluoroscopic and Roentgen Ray Findings: While, in my opinion, the patient should be fluoroscoped before each refill, the fact remains that the degree of rise of the diaphragm can not be determined accurately by this means. As a matter of fact, the abdominal viscera are often displaced downwards and give the impression that there is more elevation of the diaphragm than actually exists. Roentgen ray films are, therefore, the only accurate means of determining the amount of rise of the diaphragm.

Control of Symptoms: The control of symptoms also aids in deciding on the volume of air to be administered. In hemoptysis cases, the amount of air is usually increased until this symptom is controlled or until the maximum permissible intra-abdominal pressure has been reached. In febrile cases, a similar course is followed.

Frequency of Refills: For a few months after this series was started treatments were given every five days for four to six weeks and at the end of that time the interval was increased to seven to ten days. However, observation has shown that better results are obtained from more frequent insufflations. For that reason, many of these patients were treated twice weekly for a few months, or until the volume of air had been

reduced to 250 or 300 c.c. for each refill. The period between treatments was then increased to seven days, but longer intervals than that do not appear to be advisable for most cases.

Untoward Symptoms: While some discomfort may be expected after pneumoperitoneum, particularly the initial treatment, the fact remains that these symptoms can be minimized. As stated previously, the initial volume of air should be small and the amount given increased gradually at each refill. In addition, it is also well to avoid treatments a short time after meals and before or during menstruation.¹⁷

Of these symptoms, the most frequent are shoulder pains,¹⁸ pain along the costal margins,¹⁸ dyspnea,¹⁸ and, occasionally, blood streaked sputum.

Pain: Particularly after the initial treatment, the patient complains of pain over the apices. This pain is usually referred to the shoulders. Almost as frequently, patients state that they have some pain over the costal margins. In both the upper and the lower part of the chest whatever discomfort the patient may experience is usually more marked on one side than on the other. It was observed, also, that where pneumoperitoneum follows phrenic paralysis the pain over the costal margin of the side operated on is more pronounced than over the apex and the shoulder of the same side. In no case, however, has discomfort following pneumoperitoneum made it necessary to administer opiates, and only occasionally was the pain severe enough to require ordinary anodynes.

Dyspnea: As the volume of air is increased, dyspnea generally becomes more noticeable but in only a few cases was this symptom severe enough to necessitate the discontinuation of these treatments.¹⁸ It may, however, prevent the administration of as large amounts of air as would otherwise be indicated.

Blood Streaked Sputum: In five or six cases of this series the institution of pneumoperitoneum was followed by streaked sputum or even small hemoptysis. Occasionally, these symptoms are also observed after phrenic interruption. In each case the explanation is probably based on a disturbance of structural relations. Where streaked sputum or hemoptysis have followed pneumoperitoneum, it has usually been found possible to control these symptoms by raising the intra-abdominal pressure.

Other Symptoms: Infrequently, syncope, nausea,¹⁸ and vomiting were observed. Syncope is more common in the very toxic patient who has to stand or walk after the treatment is given. Obviously, refills should be given at the bed side in such cases. Nausea and vomiting, which are also uncommon, are seen in the same kind of cases and are more likely to follow a treatment that is given a short time after a meal.

Complications. In this series the complications that were observed were subcutaneous emphysema, air embolism, massive atelectasis and atrophy of the diaphragm.

Subcutaneous Emphysema: This complication was noted in only a few cases and was the result either of high intra-abdominal pressure or of the needle not being well in the peritoneal cavity. In one of these patients air reached the deeper structures of the neck and produced temporary pressure symptoms. In another case the air found its way to the scrotum but it caused very little discomfort. Invariably, complete absorption occurred in the course of several days and no ill-effects persisted.

Air Embolism: This complication was seen in two patients. In one of these cases the symptoms were mild, but in the second case they were severe and were followed by collapse. There was, however, no fatality and after a few days each of these patients felt as well as he had before the development of this complication. In the prevention of air embolism the most important point is, in my opinion, assurance that a mesenteric vessel has not been punctured. This further emphasizes the importance of drawing the plunger of the luer outward after the point of the needle has passed through the peritoneum and before an attempt is made to introduce air.

Atelectasis: This was observed in two cases and was attributed to interference with bronchial drainage. In each of these patients the prognosis was unfavorable and, because of this fact as well as the poor results that were being obtained from treatments, pneumoperitoneum was finally discontinued.

Atrophy of Diaphragm: Atrophy of the diaphragm (or, at least, loss of muscle tone) was apparently demonstrated in one case, and probably existed in many others. In this patient left pneumothorax was instituted after pneumoperitoneum had been maintained over a period of three months. Following the institution of

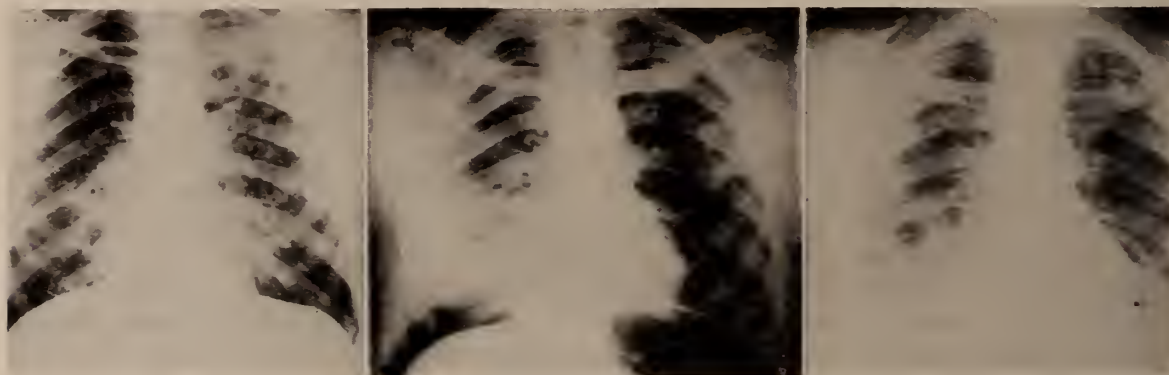
pneumothorax there was, even with a negative intra-pleural pressure, marked downward displacement of the diaphragm. However, the latter returned to normal position a few weeks after the discontinuation of pneumoperitoneum.

Duration of Treatments. In this series the duration of pneumoperitoneum ranged from 1.5 to 24 months, the average being 7.8 months. Contrary to expectation, the development of adhesions seldom made necessary the discontinuation of treatment. It was observed, also, that when necessary pneumoperitoneum could usually be re-established without difficulty. As a matter of fact, treatment was re-established in a few cases. Where re-establishment was necessary there had been, in most cases, a recurrence of hemoptysis after pneumoperitoneum was discontinued. In each of these patients, hemoptysis was controlled within two or three weeks following the re-establishment of pneumoperitoneum.

group pneumoperitoneum was utilized solely for the relief of abdominal pain and with no hope that compression could possibly influence the course of the pulmonary disease. Although diarrhea was not appreciably benefited, abdominal pain was completely relieved in 4 cases, partially relieved in 4, and uninfluenced in 1 case.¹⁹

Of the other 6 cases who are eliminated from this series, 1 patient received only one treatment and developed an acute pleural effusion following an abandoned pneumothorax; in 2 patients dyspnea became so severe that only a few treatments were given; in 1 case the prognosis was so unfavorable that discharge was approved; in 1 patient peritoneal adhesions were extensive and treatments were given with extreme difficulty; and the last of these 6 cases left the institution against medical advice a few weeks after pneumoperitoneum was started.

After excluding the above cases, there were 41



Case 1

Figure 2A. (Left) X-Ray February 21, 1934. Moderately dense infiltration right lower lobe. Light to moderately dense infiltration left upper lobe. Cavitation both lungs.

Figure 2B. (Middle) X-Ray July 4, 1934. Pneumoperi-

toneum has been instituted and there is evidence of improvement.

Figure 2C. (Right) X-Ray November 4, 1935. Further improvement, particularly on left. Patient in good condition. Density right lower result of small effusion.

Discontinuation of Pneumoperitoneum. When it becomes necessary or advisable to discontinue pneumoperitoneum, the volume of air should be reduced from 50 to 100 c.c. at each refill. In this series the usual indications for discontinuation have been either poor results or else the patients' condition had improved to such an extent that some other kind of compression or collapse therapy could be utilized.

Results. For both pulmonary compression and tuberculous enterocolitis, pneumoperitoneum was, as previously stated, instituted in a total of 56 cases. Of these patients, 15 cases were excluded for various reasons. In 9 of the latter

patients whose treatments were, as stated above, continued over a period of 1.5 to 24 months. Of these 41 cases, 25 are male and 16 are female. All are white. The ages of the male patients ranged from 17 to 43 years, the average being 27.9 years; and the female patients from 15 to 51 years, averaging 23.8 years.

Both for discussion and for the evaluation of results, these cases are grouped according to the indications for the institution of pneumoperitoneum. In the first group, made up of 14 patients, are those cases in which this treatment was instituted as an independent procedure; the second group of 12 patients are those cases in

which pneumoperitoneum was utilized to prepare the patient for some other procedure; in the third group, made up of 5 cases, pneumoperitoneum followed phrenic paralysis; in the fourth group, composed of 3 patients, this treatment

outcome of these patients was as follows: 1 case is apparently arrested (see figures 2A, 2B, and 2C, and case report 1); 1 is quiescent; 4 are improved; 5 are unimproved or worse; and 3 are dead. Of the 4 patients who are improved,



Case 2

Figure 3A. (Left) X-Ray August 22, 1932. Extensive involvement left upper lobe with multiple cavitation. Figure 3B. (Middle) X-Ray January 3, 1934. Pneumoperitoneum has been instituted.

Figure 3C. (Right) X-Ray November 20, 1934. Surgical thoracoplasty has been done. Good results. On discharge was classed arrested.



Case 3

Figure 4A. (Left) X-Ray May 12, 1934. Extensive disease, predominantly left-sided. Figure 4B. (Middle) X-Ray November 28, 1934. Disease in right lung shows definite improvement. Phrenic evulsion has been done on left.

Figure 4C. (Right) X-Ray November 4, 1935. Reveals progression of disease in both lungs. In mean time, patient had developed renal tuberculosis.

supplemented unilateral pneumothorax; and in the fifth group, of 7 cases, pneumoperitoneum was instituted for both pulmonary compression and the relief of abdominal pain.

First Group: In these 14 cases pneumoperitoneum was, as previously stated, instituted as an independent procedure and with little or no hope that any of them would become suitable for other forms of compression or collapse therapy. The

1 has had a surgical thoracoplasty but the final result is not known at this time.

Second Group: This group is composed of 12 patients some of whom, it was thought, might ultimately become suitable for phrenic interruption or for surgical thoracoplasty. To summarize, the results in these cases were as follows: 1 patient has had a thoracoplasty and on discharge was classified arrested (see figures 3A, 3B, and

3C, and case report 2); 6 are unimproved or worse; and 5 are dead. Of those that are classed unimproved or worse, 1 showed marked clinical and roentgenologic improvement and a phrenic evulsion was done on the left. A few months later surgical thoracoplasty was considered, but it was found that in the meantime he had developed renal tuberculosis. For that reason, further surgical intervention was thought contraindicated. (See figures 4A, 4B, and 4C, and case report 3).

Third Group: In this group there were 5

there were 7 patients who received pneumoperitoneum both for pulmonary compression and for the relief of abdominal pain caused by tuberculous enterocolitis. As would be expected, the results in this group are likewise poor and may be summarized as follows: 1 patient is improved; 2 are unimproved; and the remaining 4 are dead.

SUMMARY AND COMMENT

It is common observation that pregnancy often exerts a transitory beneficial effect on pulmonary tuberculosis. Clinical improvement has



Case 4

Figure 5A. (First) X-Ray November 14, 1934. Extensive bilateral disease, involving right and left upper lobe. Large cavity right upper lobe.

Figure 5B. (Second) X-Ray July 13, 1935. Pneumoperitoneum supplementing left pneumothorax. Cavity in right upper lobe smaller. Disease in left lung less dense. Pneumothorax unsuccessful on right.

Figure 5C. (Third) X-Ray November 13, 1935. Pneumoperitoneum temporarily discontinued. Cavity right upper lobe larger. Pneumothorax being maintained on left.

Figure 5D. (Fourth) X-Ray March 16, 1936. Pneumoperitoneum re-established and cavity in right upper lobe is again reduced in size.

cases who had had either a phrenicectomy or a phrenicotomy with unsatisfactory results. Therefore, pneumoperitoneum was instituted with the hope that additional elevation of the diaphragm might prove beneficial. The results were, however, uniformly poor and may be summarized as follows: 1 patient has had a thoracoplasty and is classed apparently arrested; 1 is worse; and 3 are dead.

Fourth Group: This group is composed of 3 cases in which pneumoperitoneum supplemented unilateral pneumothorax. In these cases bilateral pneumothorax could not be induced and it was thought that pneumoperitoneum might either benefit, or retard the progression of, the contra-lateral disease. The results in this group are, however, also disappointing and are as follows: 1 case is unimproved (see figures 5A, 5B, 5C, and 5D, and case report 4); and the other 2 patients are dead.

Fifth Group: In the fifth and last group

also been noted following the application of abdominal binders and with the development of intra-abdominal conditions that result in either elevation of the diaphragm or in limitation of its movement.

The degree of rise of the diaphragm will depend upon its rigidity, the intra-thoracic and intra-abdominal pressure, and the character of the tuberculous process. Whether such elevation follows pregnancy or pneumoperitoneum, there is usually more rise of the left than of the right hemi-diaphragm.

In most cases, the elevation obtained from phrenic paralysis can with the aid of pneumoperitoneum be increased, but this additional rise of the diaphragm did not, as a rule, benefit the patient appreciably. However, somewhat better results were noted where pneumoperitoneum preceded phrenic interruption.

The often disastrous effects of pregnancy on pulmonary tuberculosis are, in my opinion,

largely the result of sudden lowering of the diaphragm at the termination of pregnancy, and undoubtedly can be minimized by a continuation of bed rest and other treatment after delivery.

The therapeutic application of pneumoperitoneum for pulmonary compression is based on the transitory favorable influence of pregnancy on pulmonary tuberculosis. However, the amount of compression obtained from pneumoperitoneum is very limited and, as would be expected, the results are often disappointing.

When pneumoperitoneum is used for pulmonary compression it is well to bear in mind that the following may be considered contraindications: A patient who is in poor general condition or who is markedly dyspneic, a patient who has exudative or acute miliary disease, a patient who has large or stiff walled cavities and lastly a patient who has a rigid diaphragm.

It may be considered where other more satisfactory measures can not be utilized and where the disease is of a proliferative nature with small or medium sized cavities. Whether the involvement is unilateral or bilateral makes little or no difference except that the prognosis is, as a rule, better in the unilateral case.

The indications for pneumoperitoneum may be subdivided as follows: 1. It may be used as an independent procedure; 2. It may be utilized in preparing the patient for other forms of collapse therapy; 3. It may supplement phrenic paralysis; 4. Where bilateral pneumothorax can not be induced, pneumoperitoneum may supplement unilateral pneumothorax; and, 5. It may be found of some value in the treatment of pulmonary tuberculosis complicated by tuberculous enterocolitis.

The technique of pneumoperitoneum is acquired easily but this procedure is not devoid of danger. Of the possible complications, air embolism is the most serious but it is generally avoidable. With the possibility of this complication in mind, the plunger of the luer should be drawn outward before an attempt is made to introduce air.

The initial volume of air should be small, generally not more than 200 c.c., and the amount given at each refill should be increased until the maximum volume is reached. The latter is determined by intra-abdominal pressure, fluoroscopic and roentgen ray findings and the control of symptoms.

High manometric pressures should be avoided and, in my opinion, closing intra-abdominal pressures ordinarily should not be higher than plus 5 or plus 6. Better results are obtained, apparently, with more frequent refills and without unduly high pressures.

Untoward symptoms are to be expected, particularly after the initial treatment, and the most frequent of these symptoms is pain in the shoulders and over the costal margins. However, this discomfort is minimized by the administration of a small initial volume of air.

Dyspnea is generally insignificant until the patient is receiving fairly large amounts of air. With the increase in the volume of air it, however, becomes more noticeable but it is seldom severe enough to make the patient uncomfortable or to necessitate the discontinuation of treatments.

The complications observed in this series were air embolism, subcutaneous emphysema, massive atelectasis and atrophy (or loss of muscle tone) of the diaphragm.

Treatments were continued from 1.5 to 24 months, the average duration being 7.8 months.

When discontinuing pneumoperitoneum, the volume of air should be reduced 50 to 100 c.c. at each refill. The reasons for discontinuation of treatments have been either poor results or the patients' condition had improved to such an extent that some other type of compression or collapse therapy could be utilized. In only a few cases did the development of adhesions or the severity of dyspnea make it necessary to discontinue pneumoperitoneum.

In patients who experienced a recurrence of hemoptysis after discontinuation of treatment, it was found that pneumoperitoneum usually could be re-established without difficulty.

The results obtained in this series may be summarized as follows: Total number of patients, 41: arrested, 1; apparently arrested, 2; quiescent, 1; improved, 5; unimproved or worse, 15; and dead, 17.

Obviously, these results are very poor, but it should be borne in mind that many of the patients in this series had extensive disease. As a matter of fact, the prognoses were so unfavorable in many of these cases that they ordinarily would be considered unsuitable for any form of special treatment.

It is my opinion therefore that, with selected

cases, a much higher percentage of favorable results could be anticipated.

However, the amount of compression afforded by pneumoperitoneum is limited and it is in no way comparable to that obtained from most other types of compression and collapse therapy.

CONCLUSION

1. As a method of pulmonary compression, pneumoperitoneum has very limited application in the treatment of pulmonary tuberculosis.

2. However, where other measures either fail or can not be utilized it may aid in the control of hemoptysis and in the reduction of toxemia.

3. In this way, an otherwise unsuitable case can sometimes be prepared for surgical intervention.

4. In some of the bilateral cases that are not likely to be considered for surgery, the compression afforded by pneumoperitoneum may be sufficient to improve the patients' general condition.

5. Where pneumoperitoneum supplemented unilateral pneumothorax it was found that it usually had little or no effect on the course of contralateral involvement.

6. In the treatment of pulmonary tuberculosis complicated by tuberculous enterocolitis pneumoperitoneum may benefit the pulmonary disease and also relieve abdominal pain.

7. In our attempts to obtain a high percentage of arrested and apparently arrested cases, as we may expect in the treatment of the minimal and the moderately advanced, we should not lose sight of the fact that one of our purposes is to reduce toxemia and alleviate symptoms.

8. Whether prolongation of life in hopeless cases is advisable would be open to question.

The writer wishes to express his gratitude to Dr. J. A. Stocker, Missouri State Sanatorium, for his helpful suggestions and criticisms in the preparation of this paper.

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CASE REPORTS

Pneumoperitoneum Instituted as an Independent Procedure

1. G. E.: White, male, age 25 years. Admitted to sanatorium February 19, 1934. Onset November, 1933 with "cold." On admission, appeared very sick. Temperature ranged from 101 to 103 and he was having profuse recurrent pulmonary hemorrhages. Roentgenogram revealed moderately dense infiltration of right lower third with a 2.5 c.m. cavity. In the upper half of left lung there was a light to moderately dense infiltration with a 2 c.m. cavity. Sputum tests were repeatedly positive for acid fast bacilli and blood sedimentation index (Cutler method) was 35 mm. Prognosis was considered very unfavorable. Left pneumothorax was instituted but collapse was lost within a few weeks. Pneumothorax was unsuccessful on right. Temperature remained high and hemotyses continued. Pneumoperitoneum was started May 22, 1934, and was maintained eight months. Excellent results. After a few refills hemorrhages were under control and within a few weeks temperature became normal and remained so. Patient gained from 171 to 210 pounds in weight and blood sedimentation index dropped from 35 to 21 mm. Sputum tests have remained negative for tubercle bacilli since September 12, 1934. This case was classed apparently arrested a few months prior to his discharge. See figures 2A, 2B, and 2C.

Pneumoperitoneum Instituted with Hope of Preparing Patient for Surgical Intervention

2. C. S.: White, male, age 37 years. Admitted to sanatorium August 21, 1932. Onset in 1931 with cough, fatigue, dyspnea and night sweats. Roentgenogram revealed light infiltration right upper lobe with much evidence of fibrosis, and a dense infiltration of left upper and lower lobe. In upper lobe of the left lung there was multiple cavitation, the largest of which measured 7 c.m. in its greatest diameter. The left hemi-diaphragm was elevated and the heart and mediastinum were displaced to the left. Sputum tests were repeatedly positive for acid fast bacilli and his blood sedimentation index (Cutler method) was 27 mm. For several months, or until recurrent hemorrhages emphasized the importance of compression, patient refused all forms of special treatment. Finally, pneumothorax was attempted on the left but was unsuccessful. Pneumoperitoneum was started August 20, 1933. Hemorrhages were controlled and phrenic evulsion was done January 3, 1934. As was expected, the amount of compression thus obtained was inadequate and a three stage surgical thoracoplasty was done July to September, 1934. Since the latter date sputum tests have remained repeatedly negative for acid fast bacilli and his blood sedimentation index has ranged from 5 to 7 mm. On discharge, Octo-

ber 20, 1935, this patient was classed arrested. See figures 3A, 3B, and 3C.

3. C. E.: White, male, aged 23 years. Admitted to sanatorium May 12, 1934. Onset in 1932 with recurrent pulmonary hemorrhages. Roentgenogram revealed a moderate to dense infiltration in right apical and subapical regions with a lighter infiltration involving the remainder of the upper half. This disease showed poor detail but there was no definite cavitation in the right lung. In the middle third of the left lung there was, however, a moderate to dense soft infiltration with multiple cavitation the largest of which measured 4 c.m. in its greatest diameter. A lighter infiltration showing a fair degree of detail was present in the upper and lower third. Sputum tests were repeatedly positive for tubercle bacilli and his blood sedimentation index (Cutler method) was 33 mm. Left pneumothorax was unsuccessful. For that reason, pneumoperitoneum was instituted June 11, 1934. This was followed by both clinical and radiological improvement. There was a gain of 27 pounds in weight and his blood sedimentation index dropped from 33 to 25 mm. Involvement of right upper and middle lobes showed marked retrogression but there was very little change in the left lung. Sputum tests remained positive for tubercle bacilli. Phrenic evulsion was done on the left and pneumoperitoneum was discontinued temporarily. However, hemoptysis recurred and made it necessary to reestablish the latter. Within ten days or two weeks after pneumoperitoneum was reestablished hemorrhages were controlled. A few months later patient was considered for surgical thoracoplasty but it was found that in the mean time he had developed renal tuberculosis. For that reason, thought of further surgical intervention was abandoned. As would be expected, this patient's condition is now worse. See figures 4A, 4B, and 4C.

Pneumoperitoneum Supplementing Unilateral Pneumothorax

4. F. A.: White, male, aged 24 years. Admitted to sanatorium November 13, 1934. Onset in January, 1934, with slight persistent cough and pain in the left chest. Roentgenogram revealed a densely infiltrated right upper lobe with a cavity measuring 6 c.m. The left hilum was surrounded by a moderately dense infiltration which extended throughout the upper lobe. In the left subapical region there was multiple cavitation the largest of which measured 2.5 c.m. In both the right and the left lung the disease showed poor detail. Sputum tests were repeatedly positive for acid fast bacilli and his blood sedimentation index (Cutler method) was 27 mm. Pneumothorax was unsuccessful on the right. A week or ten days later patient began having profuse recurrent hemoptyses and temperature was high. Pneumoperitoneum was started February 14, 1935, but hemoptysis was not controlled. Pneumothorax was instituted on the left and, after a few refills, hemorrhages ceased. There was definite retrogression of the disease in both lungs with reduction in the size of cavities. Sputum tests remained positive for tubercle bacilli but his blood sedimentation index dropped, temporarily, from 27 to 22 mm. Pneumoperitoneum was discontinued for a short time but an increase in the

size of the cavity in the right upper lobe made it necessary to re-establish this treatment. Following the re-establishment of pneumoperitoneum, the cavity in the right upper lobe again showed marked reduction in size. However, this patient's condition is unimproved and his prognosis remains unfavorable. See figures 5A, 5B, 5C, and 5D.

INDUCED HYPERINSULINISM

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With the introduction of insulin in the treatment of the diabetic patient by Banting¹ and his co-workers at Toronto, a new era in diabetic therapy was begun. New concepts of pancreatic functions immediately followed.

The use of insulin in diabetics was soon followed by the realization that overdosage was associated with certain symptoms—Banting, Fletcher and Campbell² described the vasomotor phenomena, sense of heat, profuse sweat, mental symptoms, etc., which occurred following overdosage of insulin. Shortly thereafter, Seale Harris³ described a syndrome seen in non-diabetics which simulated the symptoms shown by patients given overdosage on insulin and reported five cases of hyperinsulinism and dysinsulinism. There was a renewed interest in pancreatic function with the introduction of a hitherto undescribed clinical entity and many reports of hypoglycemic reaction secondary to pancreatic disease appeared in the literature. Several writers demonstrated a feasible surgical approach to the problem of hypoglycemia produced by pancreatic over-production of insulin.

The introduction of hypoglycemia shock for the treatment of the psychotic patient is bringing about a new phase in the concepts of insulin action. Manfred Sakel⁴ at the Pötzl Clinic in Vienna, treated patients suffering from schizophrenia and other psychoses with massive dosages of insulin with the express purpose of producing a syndrome of hypoglycemia and found a much higher percentage of remissions among psychotics than had been previously noted.

This study was undertaken during the treat-

ment of patients suffering from psychoses in the schizophrenic group, and is a result of an investigation in over five hundred individual doses of insulin, ranging from 15 units to 310 units. Both male and female patients were studied, of whom seven were males and six were females.

The technique consisted of the administration of increasing doses of insulin at 7:30 A. M. and taking blood pressure, temperature and pulse readings at half-hourly intervals. Patients were watched constantly for symptomatology appearing during treatment and where feasible, a neurologic examination was done as frequently as every one-half to one hour. Hypoglycemic reactions were terminated by administration of sucrose in tea by nasal tube when patients were unable to swallow. Treatment was terminated in from three to four hours after administration of insulin which was given intramuscularly. "Iletin" (insulin Lilly) was used in U 20 to U 80 per cc, the U 80 being most desirable for our purpose.

It is the authors' desire in this article to point out the clinical and physiological manifestations of hypoglycemia produced by massive doses of insulin. It is unfortunate that closely correlated laboratory findings could not be made in conjunction with the clinical study but such studies are to be carried out when laboratory facilities permit.

The reactions of the patients varied considerably from day to day but in general similar symptoms tended to be repeated in the same patient. A marked individual difference was shown by different patients in type of symptomatology and the dosage necessary to produce a response.

After examining the material obtained from the study, it was found that the symptoms could be divided into the following groups:

1. Gustatory
2. Vasomotor
3. Neurologic & Mental
4. Cardiovascular
5. Temperature changes

Gustatory manifestations were among the most frequent noted and occurred earlier in the course of the therapy than all except the vasomotor phenomena. Voluntarily asking for food or responding eagerly when food was suggested was very commonly noted. On several occasions, patient dashed out of bed after the tea sucrose

mixture or eagerly grasped for another patient's sucrose. As the therapy continued, the desire for food became less evident and during the last two or three weeks of treatment patients rarely requested food. Apparently the failure of not having the stimulus call forth a response is closely related to this loss of "hunger reflex"; snoutzmaul, protruding and puckering of mouth, smacking and sucking of lips and tongue, sucking of fingers, bedding, etc., sialorrhea are all included in the group of gustatory symptoms. Like the sensation of hunger these manifestations occurred commonly in from one to three hours after the injection of insulin, and were more frequent within the first three weeks of the treatment.

Vasomotor phenomena formed an interesting group of symptoms and were almost a constant feature throughout the therapy. Patients would begin to show a mild amount of perspiration in the folds of the extremities, about the lips and nose, within about one hour after the injection of insulin. Perspiration would continue to become more pronounced so that within one and one-half hours after treatment, patients would not uncommonly be drenched with a profuse perspiration which saturated bedclothes and bedding. Some of the patients would be soaking in perspiration to be followed in an instant by complete loss of perspiration with the skin being left almost completely dry. Failure to perspire was exceedingly uncommon. With the onset of perspiration, a flush would occur about the cheeks and finally involve the entire face with an area of circumoral pallor which strongly suggested the appearance of a full blown scarlet fever. The flush often tended to take on a cyanotic hue and was not uncommonly followed by an extreme pallor of face and body.

Coldness of the extremities was noted as a rather variable factor and was somewhat more common among the women than among the male patients. The coldness would begin in the hands and feet and spread upward to involve the entire limb and then the entire body. It was usually associated with a pallor of the extremities. In its extreme state, patients would have a deathly pallor of the face with a dusky hue: the limbs and body would appear to be blanched and were cold and moist or sometimes dry. Some patients, during the period of flushing would complain of a sensation of heat and throw off their bed clothes

and during the period of coldness of extremities and pallor would complain of feeling cold although at times the patients would complain of heat when temperature was falling and the body was cold to touch. The tendency to coldness of extremities was less pronounced in the latter weeks of treatment suggesting a readjustment of the vascular beds to the abnormal state induced.

That neurologic manifestations of induced hypoglycemia are of real significance can readily be appreciated by glancing through the literature and noting the frequent references to hyperinsulinism and epilepsy. Seale Harris⁵ described three cases of epilepsy and gave a rather comprehensive review of the literature up to 1933 concerning epileptic and narcoleptic manifestations of hyperinsulinism in cases of spontaneous hypoglycemia.

A very wide variety of neurologic manifestations occurred throughout the course of treatment but aside from hypotonia and changes in the reflexes the neurologic manifestations occurred at a somewhat longer period after the injection of insulin, than the vasomotor and gustatory phenomena.

Various explanations for the neurologic manifestations have been attempted. Olmstead and Taylor⁶ as early as 1924, attempted to explain the convulsive reactions on an anoxic basis. Dameshek and Myerson⁷ in an interesting procedure showed as much as 37% loss of oxygen by brain tissue after insulin was given to a group of patients thereby tending to substantiate the anoxemia theory. That epinephrine might be the cause of the symptomatology noted was suggested by Cannon, McIver and Bliss,⁸ Abe, Y. and Kingelman, B.⁹

Sensory findings were not specifically looked for during neurologic observation. However, ataxia has been described as a symptom seen in the course of hyperinsulinism.

Manifestations noted were chiefly motor in character; tremor of fingers of a severe to mild character was noted frequently. Fibrillatory muscular movements were seen occasionally but twitchings of muscles were very common. Especially was this pronounced in the facial group.

Convulsive seizures and muscle spasms, of a clonic type, involving one or a group of muscles, were common manifestations. Patients once having had clonic convulsions tended to repeat the convulsive reaction at about the same time

daily. This tendency of repetition of these reactions was noted in other neurologic phenomena. Although other observers have written of epileptiform or epileptic attacks, Isabel Wilson,¹⁰ quoting from an article by Dr. Mueller, writes: "We have seen 29 epileptic attacks in 9 out of our 30 cases." The author, however, has never seen a convulsive reaction which simulated a grand mal attack in an idiopathic type of epilepsy, although very many clonic seizures were noted. Clonic muscular spasms varied from rigid flexion of the forearm to acute clonic convulsion, with cyanosis, inspiratory difficulty and stridor, suggesting laryngeal spasms. Tonic convulsions were seen only occasionally throughout the treatment. Patients, before and during such seizures, were usually in a state which suggested an increased intracranial pressure or cerebral hemorrhage.

Psychomotor restlessness, with a wide variety of manifestations, such as "bicycle-riding movements" of the lower extremities, tossing about aimlessly in bed (either with the entire body or extremities alone) and a tendency to become combative and jump out of bed were not infrequent. Occasionally, a patient would bounce up and down in bed, and at the same time, exhibit a marked mental excitement. There was a marked tendency for this to be repeated on the following days of treatment. Dysarthria was noted as patients were approaching coma or coming out of it. Apparently aphasia follows the dysarthria, since patients are able to respond by motor reaction to commands, yet are unable to respond verbally as coma approaches. Reflexes showed marked variability. Hypotonia, with diminishing reflexes, occurring early, followed later by exaggeration when other signs of central nervous system irritability were in evidence. Differences in reflexes, on the two sides, was also a common finding. Pathological deep reflexes were elicited frequently during the periods of increased nervous system irritability; Babinski, Oppenheim, Gordon and Hoffman signs were elicited. Ankle clonus was noted at another clinic. A spontaneous response, characterized by dorsiflexion of the large toe and planterflexion of the small toes without flaring, was almost a consistent finding in stages of increased central nervous system irritability. Absence of corneal reflexes was noted in deep coma, with the loss of the swallowing reflexes occurring earlier than

that of the loss of corneal reflex. Abdominal reflexes tended to be lost as the patient became stuporous.

Eye findings were common and tended to show the marked variability, of the neurologic manifestations previously noted. Strabismus, with alternating involvement of different muscles, and nystagmus, were almost constant features as the patients approach coma or while in coma. Unequal pupils, dilated pupils, constricted pupils were all noted with a fair degree of frequency. Alternating dilatation and constriction of the pupils would occur occasionally.

Mental changes, were studied only in so far as they were considered to be a result of the insulin reaction. Most patients tended to become quiet, if previously disturbed, as the hypoglycemic reaction became more pronounced, and finally lapsed into stupor or coma. Excitement was seen early after administration or shortly before coma in a fair percentage of patients. Extreme restlessness and excitement, without the patient tending to go into coma, sometimes necessitated termination of treatment. Lucid periods, during and following therapy, occurred with relative frequency. A more careful study of the mental changes and effect of therapy in a psychosis is being prepared for more specialized investigation.

No spinal fluid study was made by us. Dameshek and Myerson, however, found in 11 cases an increase in the cerebral spinal fluid pressure before any visible reaction, due to insulin, was noted. The content of dextrose during the period of observation (of 45 to 90 minutes) did not become diminished. In animals, Kasahara¹¹ noted a distinct drop to take place two and one-half hours after administration of insulin.

Cardiovascular symptoms were studied by De Châtel and Palisa, C. H.,¹² who demonstrated sinus arrhythmia and flattening of the T-wave on electrocardiogram. Sinus arrhythmias and extrasystoles were very frequent, and a tendency to cardiac irregularity more pronounced the longer the period of hypoglycemia.

During the first two months of treatment, patients were kept in coma for longer periods of time than during the latter part of the treatment. It was during these periods that patients showed a reaction at the height of coma or shortly after having received glucose, which resembled a right heart failure. The pulse became exceedingly

irregular and weak. There was a pronounced pulse deficit. The patients' lips and extremities became cold and cyanotic. Death, in some cases, seemed imminent; however, all the patients responded to emergency measures for hypoglycemia and shock.

It was interesting to note that cardiovascular failure tended to occur within a short time after the administration of glucose for the termination of coma, and that patients, after such administration of glucose, would occasionally become more deeply comatose, and as the coma deepened, would develop—what seemed to be—a right heart failure. These reactions appeared with much less frequency after the period of hypoglycemia was lessened. Certainly, a more detailed study of cardiovascular conditions in hypoglycemia would be interesting. Bradycardia, with the pulse tending to fall was present in the greater number of cases. A few showed a tendency to have a tachycardia consistently. One of the patients showed many signs indicative of a low basal activity, including a bradycardia, and showed a rise of pulse as the hypoglycemia progressed. The rise shown in this patient was strongly in contrast to the consistent tendency toward a drop noted in other patients without the other signs of a low basal activity. The blood pressure tended to show an increase in the systolic, with a fall in the diastolic, in most of the patients, so that there was an increased pulse pressure in almost all patients studied.

The marked temperature drop noted in several of the individuals, and the almost invariable fall of some degrees, in all patients, was one of the most interesting phenomena noted. Falls of temperature became manifest one-half hour after administration of insulin, and showed a steady fall, with the temperature sometimes dropping to points below the lowest reading of the thermometer. A typical group of readings on one patient, E. B., taken after administration of 195 units of insulin, follows:

7:30	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30
97.8	97.6	95.8	95.	94.2	93.4	92.8	92.2	92.

Temperature usually returned to normal within one to one and one-half hours after termination of treatment. Several of the cardiovascular collapses were noted at the periods of lowest temperature. Attempts were made to control temperature drop by applying external heat from the time at which insulin was administered to the

point of termination of treatment, but a fall occurred despite this endeavor to prevent it, though the fall, in these cases, was not quite as marked as that noted when no external heat was applied.

Visscher,¹³ in giving large doses of insulin to animals, reported a failure to notice a consistent drop in temperature. However, European investigators and others working with insulin shock therapy in this country have likewise noted marked tendency toward temperature fall noted by us.

Summary: Patients given insulin shock therapy were studied to observe changes produced by induced hypoglycemia. It was noted that symptoms could be grouped under these five divisions: respiratory, vasomotor, neurologic and mental, cardiovascular and temperature changes. Each group is deserving of a complete and separate study—some of these studies are to be undertaken by the authors.

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THE EFFECT ON THE URINARY BLADDER OF OBSTRUCTION TO ITS OUTLET

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With the interest of the urologic world at present focused on the newer methods of removing obstructing prostatic tissue, there has been a tendency to neglect the effect of the obstruction on the remainder of the urinary tract, and particularly to overlook the important part played by the bladder in the successful emptying of that viscus.

There is a great difference in the manner in which the bladder may react to a progressively developing obstruction at its outlet. In some patients the musculature of the bladder hypertrophies as the emptying becomes difficult, while in others the bladder wall relaxes and becomes atonic. If the obstruction in the prostatic urethra develops slowly, a hypertrophy of the bladder musculature may, for a time, develop in proportion. Patients in whom an increase in the strength of the mechanism for emptying the bladder has kept pace with the development of an obstruction to the outflow will remain free from residual urine for a surprisingly long time. Such a patient will complain of slowness and difficulty in initiating urination and of a progressive diminution in the size of the urinary stream, but on testing his bladder with a catheter after voiding, he may be found to be quite free from residual urine.

Absence of residual urine does not necessarily insure the absence of such symptoms of prostatic enlargement as nocturia and frequency of urination. The nocturia in these cases is not to be explained on the usual basis of an incompletely emptied bladder. In the patients who empty their bladders completely but nevertheless complain of nocturia and frequency, these symptoms are due to a foreign body at the bladder neck in the form of an intravesical protrusion of an enlarged prostatic lobe.

The hypertrophy of the bladder musculature in response to prostatic obstruction can be readily observed by cystoscopic observation of the bladder. The enlargement of the meshwork of muscle bands that run criss-cross throughout the bladder wall stands out in the form of trabeculations. These visible trabeculations do not start up uniformly throughout the bladder but usually appear

in one area and later spread to include the rest of the bladder. On cystoscopic observation of the interior of the bladder at the time of operation on a prostatic obstruction, it is not unusual to see a circumscribed area of rather definite trabeculations in the posterior wall or posterior base of the bladder, which is the region in which they usually make their appearance.

As the trabeculations of the bladder wall increase, the muscle bands stand out in bold relief, and between them depressions or cellules appear. These cellules are the areas of least resistance in the bladder wall, and, as the muscle bands grow stronger and the pressure increases within the bladder during urination, the cellules between the trabeculations grow weaker and form out-pouchings which may ultimately enlarge to become diverticula of the bladder. A diverticulum is the giving way of the bladder wall in one area as the result of a prolonged increase of the urinary pressure.

Trabeculations of the bladder wall and diverticula of the bladder are peculiar to the male and are seen in the female only in those very unusual cases of bladder neck contractions in women.

Diverticula of the bladder are not of frequent occurrence, but their presence signifies a long standing, incomplete obstruction to the urinary outflow.

As back pressure on the urinary tract develops as the result of obstruction at the bladder neck, it may be absorbed by a distending bladder. However, in patients in whom the bladder wall has hypertrophied in response to a slowly developing prostatic obstruction, the thick bladder wall will be unable to distend, and the back pressure will be transmitted to the kidneys with resulting depression of renal function. In this manner a hypertrophy of the prostate, if unrelieved, will ultimately terminate life.

It is apparent that the ability of the bladder in some cases to hypertrophy, and so compensate temporarily for the obstruction, is not wholly advantageous to the patient, as the bladder may stand its ground against the increased urinary pressure and transmit that pressure to the kidneys, where it can do the most harm.

It is well to consider the practical application of this knowledge to the practice of urology. Frequently one sees patients who complain of difficulty in voiding but whose condition is not sufficiently serious to make immediate intervention imperative. That such obstruction necessitates

abnormally increased intravesical pressure in order to effect an emptying of the bladder is evidenced by the slowness in initiating urination and by the straining and difficulty the patient experiences at voiding. At first thought the physician may assume that, so long as the patient continues to void, it is not advantageous to intervene. However, when one considers that the force required to expel the urine leads to unfavorable changes in the remainder of the urinary tract, and that, even though the patient may be successfully emptying his bladder in the face of a partial prostatic obstruction, he is doing so only by means of an increased intravesical pressure which is damaging at first to the bladder and latter to the kidneys, it becomes apparent that it is not to the best interest of the patient to permit a partial prostatic obstruction to continue and progress.

An obstruction to the urinary outflow does not necessarily lead to an infection of the urinary tract. The presence of stagnant urine in an incompletely emptied bladder does, however, provide a fertile soil for an infection. A pre-existing or an intervening urinary infection will flourish in the presence of an incompletely emptying bladder.

Most urinary infections in the presence of prostatic obstructions are introduced from the outside. Regardless of the care that may be employed in the technique of catheterization, there is no way of preventing the secretions in the anterior urethra and the organisms present at the urethral meatus from eventually being carried back into the bladder. A normal bladder can protect itself against the possible contamination of single catheterization, but the stagnant urine in an incompletely emptied bladder is a fertile soil for infection, and a patient who requires interval catheterization for a urinary retention will quite regularly develop an infection of his urinary tract. By relieving the obstruction before it becomes complete, the added complication of infection can usually be avoided.

As has been stated, some urinary bladders hypertrophy in the presence of a slowly developing prostatic obstruction. In other patients the bladder relaxes and becomes atonic. Such a bladder is incompetent to empty itself completely in the presence of obstruction at its outlet, and after each voiding residual urine remains. As the obstruction increases, the amount of residual urine increases and the bladder slowly distends

and loses its tonicity. By distending, the bladder absorbs the back pressure, but it does so at the expense of its wall. In such an instance, if the incomplete prostatic obstruction is unrelieved, the bladder finally becomes distended to such an extent that, although the patient is still able to pass some urine, he develops a retention that may become enormous. By that time the bladder has been stretched far beyond its normal capacity and may contain several liters of urine without transmitting to the patient an urge to void. A chronically distended bladder loses its tonicity and, after the removal of the obstruction at its outlet, will be a long time in regaining sufficient strength to empty itself completely.

A case in point is considered:

Mr. J. S., aged 64 years, was admitted to the hospital, complaining of progressive difficulty with urination for one year. For several months he had had an increased frequency of urination associated with an inability to void satisfactorily. Recently he had been unable to void more than a small amount at a time and when referred to us had a complete retention of urine. Abdominal examination revealed that the bladder was distended to the umbilicus. As the bladder was not emptied all at one time, it was not possible to determine the exact content. His bladder was gradually decompressed over a period of fifteen hours, and during that time 4,650 cc. of urine was obtained. If his kidneys secreted a liter and a half of urine during that time, his retention on admission was in the neighborhood of three liters of urine.

At cystoscopic examination he was observed to have an intravesical projection of the lateral lobes of his prostate (Grade II) and a median as well as lateral lobe intra-urethral enlargement (Grade I). The excess prostatic tissue was removed by a trans-urethral resection.

At the cystoscopic examination the bladder was so lacking in tonicity that the irrigating fluid was not expelled readily through the instrument, and it was necessary to press on the abdomen in order to facilitate the emptying of the bladder.

When the bladder has become so chronically distended and atonic, the removal of the obstruction will not immediately effect a normal emptying of the bladder. Considerable time will be required for the bladder wall to regain sufficient strength to expel the urine. Once the obstruction has been removed, however, the bladder wall will gradually begin to regain its tone and eventually will again be able to empty itself in a normal manner. Considerable patience is required by the surgeon as well as by the patient during the time that the patient is unable to void effectively. A failure to perceive the cause of the delay in the improvement might lead to discouragement on the part of the patient and to unwise intervention on the part of the surgeon.

In the case described, the patient had just such a chronically distended and atonic bladder, and the fol-

lowing chart indicates the amount of residual urine he carried on each post-operative day, showing the gradualness of the improvement and the ultimate complete recovery.

Post-Operative Day	Residual Urine	
2nd	350 cc.	
3rd	650 cc.	
4th	850 cc.	
5th	150 cc.	} Bladder irritant used.
6th	120 cc.	
7th	50 cc.	
8th	175 cc.	
9th	120 cc.	
10th	400 cc.	
11th	360 cc.	
12th	300 cc.	
13th	300 cc.	
14th	210 cc.	
16th	240 cc.	
18th	200 cc.	
20th	100 cc.	
22nd	75 cc.	
24th	40 cc.	
28th	55 cc.	
31st	30 cc.	
37th	5 cc.	

In the case reported, thirty-seven days were required after the obstruction was removed for the bladder to regain sufficient tonicity to empty itself.

There are two requisites for successful emptying of the bladder: one, that an adequate channel be present at the outlet; and the other, that the bladder wall have sufficient contractile power to expel the urine.

In patients with *tabes dorsalis*, multiple sclerosis, injuries or other lesions of the spinal cord, the atonicity of the bladder is neurogenic in origin. In most instances, however, the atonicity of the bladder is secondary to a chronic incomplete obstruction to the outflow of urine, and by re-establishing a free passage through the prostatic urethra, the bladder will be able eventually to regain the power to completely empty itself.

A few years ago the pre-sacral nerve sympathectomy was introduced in the treatment of atonic bladders, but it has been largely supplanted by prostatic resection, as it has been demonstrated that, after a wide open passage has been established at the bladder neck, the bladder will in time regain its tonicity.

The proper employment of the trans-urethral prostatic resection should revolutionize the management of incomplete obstructions at the bladder outlet. The operations should be used, not only as a cure for prostatic enlargement, but as a preventive of damage to the bladder and kidneys.

In previous years when supra-pubic or perineal

enucleations were the only approaches available for relief of prostatic enlargement, one hesitated to subject a patient who was suffering from only a partial obstruction to such formidable procedures, and the condition was allowed to progress until surgical intervention was no longer avoidable. By that time, too often the bladder and kidneys had taken harm.

In the trans-urethral operation, we have an approach to the removal of the obstructing tissue that carries very little risk and does not confine the patient long to bed or to the hospital. In respect to bladder complications, the proper application of this operation lies in the field of preventive surgery.

When a patient is suffering from a chronic, progressive, incomplete obstruction in his prostatic urethra as evidenced by nocturia, frequency, diminution in the size of his urinary stream and difficulty in initiating urination, it serves his interest best to have the obstruction removed before he develops an atonic bladder or a hypertrophic bladder with resulting hydronephrosis.

It is to be hoped that in the future the unhappy life known as "a catheter life" may be largely avoided. When a patient's urinary difficulty is allowed to progress to the stage where catheterization becomes necessary, the danger of infection is introduced, and a bladder that has been damaged by a long struggle against an increasing obstruction is a fertile field for infection.

Preventive therapy has long held a prominent place in medicine. To institute treatment in the early stages of human disorders, before they advance to their more serious complications, is the goal of medicine. In order to realize this ideal, one must have a method of treatment that is applicable in that it is not too hazardous, does not of itself interfere with the patient's health, and does not keep him from his routine activities for any length of time. With the trans-urethral approach we are now equipped to deal with prostatic problems in their earlier phases. The interests of the patients will in the future be best served by removing prostatic obstructions before they become complete, and before complications have developed in the bladder or upper urinary tract.

Blood iodine level is influenced by the dietary intake of calcium. It is believed that the intake of calcium is an important influence in the body, in that an excess in the diet acts as a prophylactic, whereas a deficiency favors the development of iodism. Thompson, J., *Endocrinology* 20:809 1936.

AUTOHEMOTHERAPY IN PULMONARY TUBERCULOSIS

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The use of the patient's own blood for the curing of disease or for the relief of symptoms is an old procedure and in the past fifteen years there has occurred a revival of interest in this form of therapy. A casual survey of the *Index Medicus* reveals at least fifty clinical conditions so treated, and because of the remarkable success achieved with autohemotherapy in certain subacute and chronic infectious diseases, investigators throughout Europe have tried this form of therapy in pulmonary tuberculosis. In 1930 Jansco¹ treated 114 patients by the combined methods of autohemo and autoserotherapy. His results were excellent and in 1931² he repeated his studies with another group and concluded that autohemotherapy offered a specific plan of treatment that could be of great value. Daniel and Schiffbeck³ repeated Jansco's clinical experiment and found no distinct differences in the course of the disease between patients treated only by hygienic measures and those treated by autohemotherapy. While the continental literature, for the past ten years, offers numerous articles pro and con, the American literature has been noticeably silent on this form of treatment. With this thought in mind, we decided to try this method of autohemotherapy. At the Tuberculosis Division of the Cook County Hospital in Chicago, approximately 1,300 patients are seen yearly and for the most part these are moderately and far advanced types. Fifteen patients were selected with unquestionable pulmonary tuberculosis of the moderately or far advanced types, who were not making progress but who were also not moribund, for these latter patients would offer only poor clinical material for such treatment and we did not expect that autohemotherapy would cure but would merely aid the normal reparative processes already present.

Eight females and seven males were studied for fourteen weeks and each received three treatments per week averaging 52 injections of 10 to 15 c.c. of whole fresh blood taken from the arm under sterile conditions and injected directly into the buttocks, with the blood remaining in the syringe for an average time of 50 seconds.

The weights of the patients were checked at weekly intervals; the T-P-R was recorded daily; the sputum was examined for bacilli bi-monthly; reactions of any kind were noted, and each patient was studied roentgenographically before and after the experiment to determine whether any change had occurred which could not be detected by physical examination of the chest. None of our patients received pneumothorax treatments, but all were either semi-ambulant or confined to bed and were subjected to the standard therapeutic regimen of the hospital. For our controls we used the record findings of each patient prior to and after the experiment, as well as the findings in a similar group treated with artificial pneumothorax.

Summary of Results: 1. None of the patients were gaining in weight before the experiment began. After two months of treatment, six showed a gain in weight, varying from one to seven pounds, averaging four pounds.

2. Eleven patients were losing weight before the experiment began. Of these, five stopped losing and this may be interpreted as a gain; two showed a gain in weight from one-half to three pounds, and four continued to lose.

3. The weights of four patients remained at a stationary level before the experiment and all showed a gain in weight, averaging four pounds.

4. All the patients were subjectively improved in that they evidenced improved appetites, better mental attitudes, lessened cough and lessened sweats.

5. Objectively, however, the results were less pronounced. In three patients the sputa became negative after two to two and a half months of treatment. The remaining twelve evidenced no change. The physical and roentgenologic findings were not altered in any of the patients. In only two patients did the temperature come down to normal levels.

6. Two patients died within three months after the experiment was concluded. Five of the six patients continued to gain in weight and continued to evidence subjective improvement, but the remaining eight either continued to lose in weight or maintained a stationary level. Of these eight, four pursued a downward course during the next six months and three died.

7. No toxic effects, local or general, were evidenced in any of the patients during the 14 weeks of the experiment, although five of the men

had an associated arteriosclerosis and one was a mild diabetic.

8. Considering a similar group of 15 patients treated according to the same hospital regimen except that they received pneumothorax without any autohemotherapy, the results were not comparable in that this group made much better improvement objectively and subjectively.

9. There was only a slight difference in favor of the group treated with autohemotherapy as compared with a similar group treated by routine hygienic-rest management without pneumothorax.

Discussion: Many theories are offered to explain the mechanism of action of autohemotherapy. Koenigsfeld⁴ states that the serum of patients suffering from infectious disease may contain abundant autogenous immune substances and yet may not save the patient from a fatal outcome, while the administration of very small quantities of foreign immune substances may bring about recovery by passive immunization. Thus, while such antibodies to certain bacteria may be found in normal serum, they have little protective power against infection by these bacteria, and it is conceivable that the effect of autohemotherapy is due to its specific passive immunization. D'Amore⁵ found a strong reaction of the medullary and reticulo-endothelial systems after injection of the patient's own blood with the production and emission of a large number of white blood cells and histiocytes into the circulation, a large part of which return to the tissues around and in the pulmonary lesion. The presence of these cells, in turn, produces a reaction in the surrounding tissues which results in the destruction of the leucocytes (whose ferments are returned to the circulation to act on the circulating tubercular products) and in the formation of a tissue granulation which encapsulates the tubercular focus. Cramer, quoting Vorschütz,⁶ states that blood serum contains 36% globulin and 64% albumin. In response to the entrance of any injurious substance into the body, there is an increase in globulin which carries the immunobiologic properties of the blood. By electro-osmotic methods it is demonstrated that in inflammatory conditions there develop first pseudoglobulins, carrying chiefly antitoxins, which persist for three or four days, and later these form into euglobulins with agglutinating and complement-fixing properties,

of which only 15% carry antitoxin. If, therefore, the patients' own blood is injected during the first days after the onset of infection, a passive immunization results, for during this stage the blood contains principally antibodies. Thus, autohemotherapy is indicated early in infectious diseases for the non-defibrinated blood, containing principally the pseudoglobulins and their bacteriocidal and antitoxic substances, acts like a highly specific serum, specific not only to the type of bacteria, but also to its strain. Lumière⁷ stresses the colloid theory. The colloids in the serum and those in the red blood cells cannot mix in the blood under normal conditions because the globular protoplasm is retained within the cells by a semipermeable membrane. When the blood, taken from the blood vessel, is reintroduced into the body, lysis of the corpuscles occur, making possible the colloidal reactions, observed *in vitro* as a flocculation. Vivanco⁸ emphasizes that this procedure stimulates the production of enzymes and antibodies and is, therefore, a specific form of therapy. Most men, however, are in agreement that regardless of the mechanism, autohemotherapy is in the nature of a mild foreign protein therapy. Smirnoff⁹ is of the opinion that the blood, after being removed from the body, becomes a foreign protein, as a result of which it becomes non-specific. He explains its action by a biochemical theory of non-specific immunity and indicates the possibility of influence by way of the vegetative nervous system and the endocrine glands. He finds that immediately after the injection there occurs a decrease in the number of leucocytes which is maximal in 20 minutes and returns to normal in one to one and a half hours. Later a relative increase in the neutrophils with a relative or absolute decrease in the lymphocytes occur, representing a stage of anaphylaxis. Thus there appear to be two phases: a negative phase associated with the phenomena of lymphopenia, relative neutrophilia and a shortening of the coagulation time and a positive phase associated with an absolute neutrophilia and monocytosis, an increase in red cells and hemoglobin. On the basis of results large doses have a depressing influence, medium doses a depressing followed by a stimulating effect on the intracellular ferments, while small doses increase the activity. Ammeim¹⁰ points out that the blood, after removal from the vein, becomes heterogenous, and

while the effect of the autohemotherapy is manifested in the entire body, the chief point of attack is directed towards the inflamed parts, probably causing an autoimmunization which leads to encapsulation and calcification.

This discussion does not by any means exhaust the entire gamut of theories offered to explain the effects of autohemotherapy. It is fairly obvious that the great variety of theories offered indicates that the last word has, as yet, not been said. While the whole question of immunity is in a permanent state of flux, it is best to consider the mechanism of action in this form of therapy as that of a mild protein therapy. The blood, after being removed from the body, in the short time which elapses before re-injection, goes through some change, as yet unknown, and becomes a heterogenous foreign body. The response, therefore, is similar in a way to that of any foreign protein therapy with the production of specific antibodies or some similar immune body. That this is so is indicated by the studies of Sorrentino¹¹ who found that the sedimentation rate diminished constantly as the injections were continued and that the protein content of the blood approached to within normal values. Since the sedimentation rate is directly proportional to the fibrinogen content of the plasma, there occurs a decrease of the fibrinogen content and a decrease in plasmotic colloidal liability with an accompanying change in the globulin-albumin ratio in favor of the albumin. In other words, the autohemotherapy not only has a normalizing effect on the hematic protein content but also affects the colloidal liability of the plasma by a redistribution of its protein components. It must, however, be stressed that the substances which give the blood the characteristics typical of the heterogenous protein are not present in the circulating blood but are formed during the "exteriorization" of the blood.

While the dangers involved in autohemotherapy are slight, they must, nevertheless, be considered. Steinberg¹² emphasizes that occasionally local, focal and general reactions may occur. Patients also suffering from the effects of arteriosclerosis and hypertension should not be subjected to this form of treatment and Jouan¹³ urges that in every case the urine be repeatedly examined for albumin and if found, the treatment must be stopped as this indicates toxicity with a possible renal involvement.

Conclusion: A group of 15 tuberculosis patients were treated with autohemotherapy, receiving three injections of 10 to 15 cc. of whole blood per week for 14 weeks. While there was abundant evidence of subjective improvement, objectively, very little was accomplished. There was no comparison with the results achieved in a similar group treated with artificial pneumothorax, but the results were, nevertheless, somewhat better than those obtained in a third group treated according to the principles of rest and hygienic care. The injections were tolerated well and caused no discomfort.

There can be little doubt that this form of therapy serves a beneficial purpose because of the subjective improvement experienced by most of the patients. Whether this may be due to a specific or to a non-specific protein effect of the re-injected whole blood is at present a moot question. However, it must be stressed that results will only be achieved in patients who have an intrinsic healing power, for if this does not exist, no therapy will avail.

We feel that this form of therapy is worthy of further and more wide-spread trial and may be a successful adjunct to the routine treatment of pulmonary tuberculosis with and without artificial pneumothorax.

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FUNCTIONAL HEART MURMURS IN NEWBORN INFANTS

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The term "functional" as applied to heart murmurs is arbitrary. Synonymously used terms are: "accidental," "accessory," "adventitious," "hemic," "atonic," "physiologic," "non-pathologic," and "non-organic." All imply absence of structural changes in the heart but none is entirely appropriate. Therefore, as long as no satisfactory substitute can be offered, continued use of the term "functional" seems justified. Terminology based on etiology is impracticable because the etiology of functional murmurs is uncertain.

Explanations regarding the genesis of functional murmurs are largely conjectural and discussion of the various hypotheses found in the literature can probably be omitted without great disadvantage.

The literature concerning functional murmurs in older children is quite extensive, that concerning infants (especially newborn infants), on the other hand, is rather sparse. Some authors attempt to explain all murmurs occurring in infants on the basis of patency of fetal circulatory structures (ductus arteriosus and foramen ovale), others concede that functional murmurs do occur but attribute them to anemia or other pathologic conditions. Reuss¹ quoted several authors to the effect that the circulation in the newborn may temporarily revert to the fetal type because of a change in pressure relations in the two sides of the heart, (usually caused by interference with the pulmonary circulation), with resultant murmur formation and cyanosis—"Mischungscyanose." He reported three cases of transient murmur without cyanosis in newborn

infants suffering from cerebral hemorrhage. In his opinion these murmurs as well as some which he observed in older infants were attributable to retarded transition from the fetal to the extrauterine type of circulation. Jacobssohn² stated that practically all observers agree that non-organic heart murmurs are not encountered until after the third year of life, and that this view had been incorporated in the important German textbooks on pediatrics. The object of his case report of a murmur in an infant with melena was to add support to the few observations in the literature regarding the occurrence of accidental murmurs in early childhood. As early as 1902 VonStarck³ reemphasized his opinion that anemic murmurs occur during infancy. In discussing atelectasis Holt & McIntosh⁴ made the general statement that "loud accidental murmurs may occur at this age." In view of the sparsity of reports and the lack of systematic observations, collection of data regarding functional murmurs in newborn infants seemed of practical as well as academic interest.

Investigative Work. Newborn infants in the ward nursery at Presbyterian Hospital were examined twice a week. For several reasons more than half of the infants were examined only once or twice. As a rule they remained in the nursery only nine or ten days. Thus infants examined the first time on or after their third day of life were not likely to be present for a third examination. Some infants were nearing the end of their stay in the nursery at the beginning of the study and some were born prior to its termination. A few were absent from the nursery at the time of the examinations.

Examinations were made with as little disturbance as possible. The infants were left in their baskets (lying on their backs) with only a sufficient part of their chests exposed to permit auscultation of the cardiac area. Since examinations were made shortly after the 10 A. M. feeding most of the infants were quiet; many were asleep. Thus interference with auscultation was reduced to a minimum.

Results. The incidence of murmurs showed considerable variation. On one day no murmurs were encountered among 16 infants. On another day 5 of 18 infants presented murmurs. At times a murmur was found to be inconstant during an examination or it might be present on one ex-

amination and absent on another. (See Table 3.)

The numerical and percentage incidence of murmurs is given in tables one and two. As will be seen in table 1, 26 of the 105 infants examined presented murmurs, an incidence of 25%. From table 2 it is obvious that the incidence is proportionate in some measure at least to the number of times infants were examined. Among infants examined only once the incidence was 12%, among those examined twice 15%, and among those examined three times 37%.

Murmurs in infants examined three times presented no characteristic distribution (Table 3). They were encountered with about equal frequency during the early, middle and latter portions of the newborn period. Only two infants examined three times were found to have murmurs on every examination. In one of these a congenital heart lesion was suspected because of the location, intensity and quality of the murmur.

The murmurs heard in the newborn infants correspond fairly closely to those heard in older children. All murmurs are systolic in time, some occupying practically the entire systole, others the early, middle, or last portion of systole. Almost invariably they are heard loudest over the apex. Although some murmurs are quite loud, most are soft and blowing in character. Not infrequently a musical quality is observed. Some murmurs are so soft that they can readily be missed, especially if the infants are restless during the examination. The intensity of a murmur may vary from one examination to another or during the same examination.

Comment. The character and location of the murmurs certainly argue for their functional nature. If patency of the ductus arteriosus or foramen ovale were of etiologic importance the murmurs should be similar in character to congenital heart murmurs, and their maximum intensity should be over the cardiac base rather than over the apex.

Neither can the cause for the murmurs be sought in extracardiac pathology in the infants. With few exceptions the infants who presented murmurs were normal clinically. One had suffered a hemorrhage following circumcision. Another had a cephalhematoma and petechiae of the scalp. A third had a forceps mark on the cheek. And a fourth was jaundiced and had an

accessory ear. Assuming that these conditions might have an etiologic relationship to the murmurs, a large proportion would still be unaccounted for pathologically.

The argument that the strain of labor may be responsible for murmurs in newborn infants is gainsaid by the fact that murmurs are frequently encountered in older infants. By careful observation it is possible to detect murmurs in a large proportion of infants.

Finally, it may be stated that there is no reason to think that conditions which are responsible for functional murmurs in children may not obtain for newborn infants also.

SUMMARY

Twenty-six of 106 (25%) newborn infants were found to have heart murmurs. The incidence varied from 12% in infants examined only once to 37% in infants examined three times. For various reasons the murmurs are regarded as functional.

TABLE 1. INCIDENCE OF MURMURS IN NEWBORN INFANTS

Number Examined			Murmurs		
Male	Female	Total	Male	Female	Total
49	56	105	15	11	26 (25%)

TABLE 2. RELATION OF INCIDENCE OF MURMURS TO NUMBER OF EXAMINATIONS IN NEWBORN INFANTS

One Examination		Two Examinations		Three Examinations	
No.	Murmurs	No.	Murmurs	No.	Murmurs
16	2 (12%)	40	6 (15%)	49	18 (37%)

TABLE 3. DISTRIBUTION OF MURMURS IN NEWBORN INFANTS EXAMINED THREE TIMES

First Examination		Second Examination		Third Examination	
Age (days)	Result	Age (days)	Results	Age (days)	Result
3	—	6	+	10	+
2	—	5	—	9	+
1	+	5	—	8	—
1	—	5	—	8	+
D. B.*	—	4	+	7	+
D. B.	+	3	—	6	—
D. B.	—	3	+	7	—
2	—	6	+	9	—
D. B.	+	3	+	7	—
1	+	4	—	8	—
1	—	4	+	8	—
1	+	5	—	8	+
1	+	4	+	8	+
4	+	7	+	11	+
D. B.	—	3	+	7	+
1	—	4	+	8	—
1	—	5	—	8	+
1	+	4	—	8	—

*D. B. indicates day of birth.

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ON MONGOLISM

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This paper is concerned with a brief review of the etiologial factors which have been recognized in mongolism, and a report of two pairs of twins in whom mongolism appeared.

In recent years the subject of mongolism, especially as it occurs in twins, has received a good deal of attention. Although mongolism was mentioned as long ago as 1843 in France and was recognized as a clinical entity by Langdon Down in England in 1866, studies of mongolian idiots have been made until recently principally in terms of its feeble-minded aspects. More and more recognition has been given to the peculiarities of mongolism, that is, to its differential aspects from ordinary feeble-mindedness. It need hardly be mentioned in this paper that the term mongolian idiot is erroneous. Rarely is the mongolian idiot an intellectual idiot, that is, rarely is the I. Q. of the mongolian idiot below 30. Nor are the mongoloid features structurally descriptive of the mongol. Indeed, cases of mongolian idiocy have been reported among Mongolian people. Nevertheless, the diagnosis is made on the basis of the mongol features of the feeble-minded child, in addition to other structural defects and given features in the personality makeup.

In 1934 Rosanoff and Handy¹ published a summary of all the known reported cases of mongolism in twins. Table 1 shows that only 64 cases of mongolism in twins have thus far been reported. In each of the 36 cases of dizygotic, only one of the twins was a mongolian idiot. Of these, 13 were of the same sex, 6 males and 7 females, and 23 were opposite sex twins. In no instance were both of the dizygotic twins affected.

The evidence from these data indicate that the frequently stated theory that mongolism is a germ plasm defect is probably more tenable than

The original examinations of the reported twins were made by Elinore Tjaden.

the theory which maintains that causes operative during pregnancy are responsible for the mongolism. In this regard, Jenkins² states that the

TABLE 1
(After Rosanoff and Handy)

Type of twin	No. of Cases	One Affected	Both Affected
Monozygotid, males	3		3
Monozygotid, females	5		5
Type unascertained, males	9	7	2
Type unascertained, females	6	4	2
Same sex, Dizygotic, males	6	6	
Same sex, dizygotic, females	7	7	
Opposite sex, dizygotic	23	23	
Type and sex unascertained	5	5	
	64	52	12

data obtained on mongolism in twins substantiates the theory that unknown defects of the germ cell are to be considered as etiological. Halbertsma³ states that the conclusion that mongolism is germinal in origin is deducted from the fact that mongolism in one twin reveals that all have resulted from a two-egg pregnancy. Cases of mongolism in both twins of opposite sex are unknown. A relatively large number of cases in like sex have been reported, however. In this respect, Deitrich and Berkley state that mongolism must be "due to a defective germ plasm, and is, therefore, a developmental defect."⁴

Contrary to this conclusion is the statement of Russell⁵ who states that the existence of binovular twins, both mongols, makes it seem unlikely that the cause of mongolism is "more innate in the germ plasm" than due to maternal causes or abnormal environment of the ova. However, the data in Table 1 do not substantiate this theory. Of the cases recorded, the eight in which both were mongols were known to be monozygotic. Of the other four in which both were affected, it was not known whether they were identical or unidentical twins.

The second most frequently discussed theory is that which involves the age of the parents. Following a statistical study of the ages of mothers at the time of mongol births, Jenkins stated, "I believe that the possibility of the birth of a mongolian idiot to be worth consideration in the case of all women past forty." The literature contains a good deal of statistical evidence to indicate that the age of the mother is a factor in the production of a mongol offspring. Warner⁶ reported that of 53 mothers of mongols, the average age at the mongol birth was 35.7. Of 650

patients at the South Dakota State School and Home for the Feeble-minded 18 are mongolian idiots. The average age of the mothers at the births of these mongols was 34.5. Studies have shown that parental age is a factor only as applied to the mother, that of the father having only an indirect bearing by reason of being in correlation with the age of the mother. Rosanoff and Handy believe that the size of the family, order of birth, uterine "exhaustion," and other such factors play no part in the etiology, but stand out only by reason of their correlation with the one real factor—the age of the mother.

It has been suggested that mongolism is due to a diminished viability of the ova, that "in the population of the ova there is continually a certain mortality rate and in a period between that of complete viability and that of failure of reproductive function the ova passes through a mongolian-genetic stage."⁷ The birth of a mongolian idiot is frequently preceded by a period of diminished fecundity. Shuttleworth stated that mongolian idiots were particularly prone to be borne of mothers toward the end of the reproductive period, and especially to be the last-born of a long series of children. This viewpoint has been contradicted by many investigators. For example, data from the South Dakota institution for mental defectives shows that the mongolian idiot was fourth in birth rank. Halbertsma is of the opinion that the only fact which can be asserted as having etiological significance is that the great majority of mongolians are the children of mothers who are nearing the end of the child bearing period. Jenkins also believes that mongolism is caused by a diminished viability of the ova and he further believes that this seems to be the most satisfactory explanation.

Many causes other than the two which have been discussed have been mentioned in the literature. As an example, syphilis has been prominently mentioned by a variety of investigators. One interesting example was the presentation by Van der Bogert of a pair of twins, one of whom was normal, and the other who presented signs of mongolism and congenital syphilis. A number of careful studies have shown, however, that the frequency of syphilis among mongolian idiots is no greater than among other mentally defective or normal children. In one study it was found that only two children were syphilitic among 74 mongolian idiots.

Glandular deficiency has also been advanced as an etiological factor. This theory has been given credence especially because many pediatricians believe that mongolism is due to fetalism, that is, the newborn mongolian idiot is born not at physiological maturity but perhaps at the ordinary maturity of a seven or eight-month-old fetus. The arrest in development may therefore be due to glandular disfunction not severe enough, however, to be detected after birth. Clark⁸ believed that mongolism is caused by fetal thyroid dysfunction ceasing at birth. The thyroid dysfunction may bring about the physical and mental defects in the same way as cretinism causes physical and mental deficiencies. Failure of the mongol to respond to glandular therapy, however, lends weight to the view that the condition is a general failure in development rather than a specific endocrine dyscrasia.

Jansen expressed the theory that the amniotic sac may be small and tight, causing increased pressure and excessive bending of the fetal head. He suggested that this condition may result in anencephaly, achondroplasia, or mongolism, depending upon the age of the embryo when the pressure occurs. In the instance of mongolism, the pressure may occur during the sixth or seventh week of pregnancy. This theory perhaps has some corroboration in the report of C. P. Lapage⁹ of mongolism and achondroplasia in twin brothers.

Tumpeer¹⁰ emphasizes the findings of investigators who have shown that families which contain mongolian idiots have a disproportionate number of abnormalities such as a cleft palate, hairlip and so forth. This led to the theory that mongolian idiocy is itself a malformation, not necessarily of one part of the body, but of the body development itself.

Stafford MacLean¹¹ presented a case of mongolism in one of twins and explained it by the so-called fertilization theory. If two ova were fertilized by two spermatozoa, one of the ova may have been fertilized by a normal spermatozoan, which resulted in the normal infant. The other ovum might have been abnormal and fertilized by a normal spermatozoan or might have been normal and fertilized by an abnormal spermatozoan. The result may be the mongolian idiot.

Case Studies. The following cases of mongolism in one of twins are particularly interesting

because of their unusual character. Both are cases of mongolism in one of same-sex twins, one male and one female.

Case 1. R. S., a girl was born October 1, 1916, following a normal full-term pregnancy. Instruments were used to deliver both R. S. and her twin, but no injuries were reported. She began to talk at two years, and can express herself now only with some difficulty. She began to walk at the same age. It was at this time that her backwardness first manifested itself. The patient never suffered from convulsions or epileptic seizures. In addition to measles and whooping cough she had diphtheria for five weeks when she was seven years old. She attended public school for three weeks when she was six. Since that time she has been tutored by her mother and her twin sister. At present she can solve simple problems in arithmetic and read a little.

The patient is typical of the mongolian type. Almost half a head shorter than her twin, she has the slanting wide-set eyes of the mongol, the coarse, straight hair and stubby fingers. She has a protruding fissured tongue and her hands are lined in the manner typical of some mongolian idiots. Her I. Q. is 41 by the Stanford-Binet scale.

T. S., R's twin sister, is an attractive girl. Although she has never been tested, she is apparently normal. She was graduated from high school when she was 18, and had never failed a grade in school. She discontinued her formal education to be married, else she might have attended college. She is the mother of a baby, which is apparently normal.

Family history. The father of these twins is a business man. He is prominent in community politics and highly respected. The mother is an attractive middle-aged woman of good intelligence. There is no history of any mental deficiency on either side of the family. There are no other children, nor have there been any pregnancies either before or after the birth of the twins. They were born when the mother was 36.

Case 2. W. B., a boy, was born January 18, 1927, following a normal full-term pregnancy. He never attended public school. In June, 1936, he was given the Kuhlmann-Anderson test. At this time his chronological age was 9-5, his mental age 3-5, and his I. Q. 36.

This boy is undersized and has most of the characteristics of the mongolian idiot. He has slanting, wide-spread eyes, short stubby fingers and fissured tongue. In appearance he is typically mongolian.

R. B., twin brother of the patient was tested on the same day. His mental age was 9-0 and his I. Q. 96 by the Kuhlmann-Anderson scale. He is in the fourth grade in school and is doing normal work.

The B. family is economically independent, but not wealthy. Mrs. B. is in business, is well adjusted and intellectually normal.

The twins were born when Mrs. B. was 23 and there were no pregnancies either before or after that time.

There is a history of mental deficiency on the mother's side of the family. A first cousin is a mongolian idiot and the maternal grandmother of the twins has

been reported by the state psychologist as being feeble-minded.

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THE ORGANIZATION OF THE MEDICAL SERVICE OF THE ARMY IN WAR

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CHICAGO

It is a real pleasure to appear before such a representative group of medical men as is assembled here tonight, to talk about the medical service of the Army, and to tell you some of the changes that have been made since you participated in active service during the World War. At the same time, I wish to take advantage of the opportunity to do a little missionary work; to remind you that even though you did not remain in the Reserve Corps, and even though some of you may be past the age when you may expect to do active duty in the event of another war—and some of us are getting near that age—still, I think that as members of the greatest profession on earth and as citizens of the greatest country on earth, each of you have a duty to perform in connection with the medical service of the Army. But more about this later.

The Army of today is organized somewhat differently from what it was at the beginning of the World War. Then it was small, living largely unto itself and having but little real contact with the civilian world. We had no definite and com-

prehensive military plan or policy; our organization, at least as far as the larger units were concerned, was more a conception than a reality. We talked of an infantry division, but when one of our greatest generals was asked what such an organization looked like, his answer was that he had never seen one. But in 1916 Congress approved a National Defense Act, and this has since been amended to embody the lessons of the World War. This act provides for a skeleton peace-time establishment, consisting of three components—the Regular Army, the National Guard and the Organized Reserves—and for the rapid mobilization of the nation's military forces in war. It provides for the necessary field armies, corps, divisions and other units considered necessary for the defense of this country in the event of war. In brief, we now have a comprehensive, a sound military policy.

My subject is a large one, and so I am going to say but little about the organization of the medical service in the Zone of the Interior, meaning by this term the United States or that part of it which will lie outside of the area of active military operations, the latter being referred to as the Theater of Operations. In the event of war, the office of the Surgeon General and the offices of the various Corps Area Surgeons—there being nine in the United States—will have to expand materially to take care of the task of mobilizing the forces needed. There will be required in the Zone of the Interior a large number of hospitals to take care of the sick and injured of the forces being mobilized. These will, for the most part, be the smaller, or what we call Station Hospitals, and will be located at points convenient to the mobilization points and centers. In addition, there will be needed a number of larger hospitals, termed General Hospitals, to care for the casualties sent back from the Theater of Operations.

Each field army—this to give you a little of the background of our army organization—consists of three army corps and two cavalry divisions, of certain so-called special troops, army artillery, army aviation and army signal, ordnance, engineer, medical and quartermaster units. Each army corps consists of three infantry divisions—the corps artillery and aviation, certain special troops, and corps engineer, medical and quartermaster units. The infantry division consists of two brigades of infantry, a brigade of

field artillery, certain special troops, and engineer, medical and quartermaster units. Each infantry brigade has two regiments of infantry; the field artillery brigade has three regiments—two light and one medium caliber artillery.

Every regiment and similar unit has attached to it a detachment, consisting of officers and enlisted men of the Medical Department, to look after the personnel of that regiment or similar unit. Each division has its medical unit, known as a Medical Regiment, to take over and care for the sick and wounded gathered together by the medical detachments of the regiments and similar units. The army corps, being purely a tactical and not an administrative organization, also has a medical regiment, the primary duty of which is to care for the sick and injured of the Corps troops, or, in other words, the units of the corps other than the infantry divisions. The field army is provided with the medical units necessary to take over and care for the sick and wounded from the corps and infantry division establishments.

In attempting to visualize the organization and functioning of the medical service, let us start at the front line with an infantry regiment, the Medical Department of which consists of eleven officers (eight medical, two dental and one veterinary) and eighty-four enlisted men. This detachment is an integral part of the infantry regiment, and is responsible for rendering medical service to it. The detachment is divided into a headquarters section and three battalion sections. Each battalion section sends forward with each infantry company two aid men whose function is to render first aid. A second part of the battalion section is composed of litter bearers, who bring those wounded who are unable to walk back from the front to the battalion aid station, which is established by the third part of the battalion medical section. The headquarters section of the regimental medical detachment has the equipment necessary to establish a regimental aid station, but the function of this section is to supervise and, when necessary, reinforce the battalion aid stations and to care for the casualties in the personnel of regimental headquarters. Here there is a difference from the scheme usually followed in the World War. Then, casualties were moved from the battalion aid stations to the regimental aid station, and there taken over by the division medical service. Today, the regimental aid sta-

tion is eliminated as a link in the chain of evacuation, and casualties are taken over by the division medical service directly from battalion aid stations. The medical service of artillery and engineer regiments and other similar units operates somewhat along the same lines as that of an infantry regiment, except that here it is not necessary to subdivide battalion medical sections into company aid, litter bearer and aid station squads.

From the aid stations, casualties are taken over by the division medical service, which operates much the same as in the World War, except that it was then designated as the Sanitary Train, and is now organized into and operates as the Medical Regiment. This regiment is commanded by the division surgeon and consists of a regimental headquarters, a service company, a veterinary company, a collecting battalion, an ambulance battalion and a hospital battalion. Each battalion consists of three companies. Of the companies of the ambulance battalion, one is animal drawn and two are motor driven. The service company is charged with the supply of the regiment with food, clothing, etc., and also with the furnishing of medical supplies to all medical units of the division as well as the supply of such items as adhesive plaster, first aid packets and foot powder to the troops. The veterinary company furnishes the same service for the animals as the ambulance, collecting and hospital battalions furnish for the men. Together with the division surgeon's office, which is attached, the medical regiment has a strength of 69 officers and 892 men. The total Medical Department personnel of the infantry division numbers 152 officers, of whom 101 are medical officers and 1,407 enlisted men.

Let us now look briefly at the operation of this medical regiment in combat. The collecting company (usually one per infantry brigade) moves forward and establishes a collecting station in a selected locality about a mile or a mile and a half behind the front lines. From here litter-bearer squads of the company move forward to the battalion aid stations and bring back to the collecting station the casualties who are unable to walk. At this station those casualties who need no further treatment are sent back to the front; while other casualties are given such treatment as is necessary to fit them to withstand movement to the hospital station. From the collecting stations, ambulances from the ambulance companies

transport the casualties to the hospital station, which is established by the hospital companies. At the hospital station, which will usually be between four and seven miles behind the front lines, the casualties are sorted; those who can return to the front after but minor treatments are given such; those who are in need of hospitalization are given such treatment and care as will enable them to be moved further to the rear. Those, whose condition is such that they are unable to withstand transportation, are moved by litter to what is known as the surgical hospital, to which later reference will be made. The hospital station is the last link in the chain of evacuation which is operated by the medical service of the division; from this station the casualties are taken over by the army medical service.

It may be of interest if I digress for a moment to say something about the organization of the proposed new infantry division, of which you, no doubt have seen mention in the newspapers, and concerning which I have been asked some questions. It has been argued that our present infantry division, which numbers approximately 22,000 officers and men, and occupies a road space of about 37 miles, is too large and cumbersome to be as mobile as is demanded by the needs of present day warfare. The new division is the answer to the demand for greater mobility and greater fire power. The proposed infantry division will drop the brigade organization, and will consist of three infantry regiments and one field artillery regiment; the service troops being reduced in proportion to the reduction in the numbers of combat troops. In line with the reduction in the number of service troops, a medical battalion will be substituted for the present regiment. This medical battalion will consist of the headquarters and headquarters company which will carry on the necessary administrative and supply functions, three collecting companies and one clearing company. The collecting company will, in effect, be a combination of the present ambulance and collecting company, and its function will be the transfer of casualties from the battalion aid stations to collecting stations by litter and then to the hospital station by ambulance, and their medical care en route. The clearing company will have practically the same duties as the present hospital company. I have no official information as

to why the name "hospital company" was changed to "clearing company." However, I suspect that it was to more clearly express the function of this company. The name "hospital" makes one think of an institution where the patient is hospitalized for definitive treatment, and such is not the function of the division hospital station. The function of this station is to sort, treat, and otherwise prepare the patients for return to their units or for evacuation to rear establishments. Hence, its function is one of "clearing" rather than "hospitalizing." In general, it appears that the new medical battalion will function in about the same way as the present medical regiment operates. This summer, an infantry division organized according to the new plan, is to be assembled for maneuvers, and during these, we will doubtless learn the good and bad points about it.

So much for the division medical service; let us now look briefly at the corps medical service. The corps medical service does not form a link in the chain of evacuation from the divisions to the rear. As already mentioned, each corps has a medical regiment, whose primary duty is the care of the sick and wounded among the corps troops. Secondarily, it is a reserve from which division medical regiments may be reinforced. The corps surgeon is the technical adviser to the corps commander, and in this capacity is responsible not only for the execution of the medical service provided for the corps troops, but also for the supervision of the medical service of the divisions constituting the corps.

The medical service of the army is responsible for the taking over of the sick and injured from the division and corps hospital stations. The army medical service is headed by an army surgeon, who is charged with the carrying out in the army area of the various duties with which the Medical Department is charged, except such as may be carried out by units exempted from the control of the army commander. To assist in the functions of his office, the army surgeon is supplied with a staff of assistants, who with him constitute the army medical headquarters, and certain medical units, to which I will now refer.

First, there are four medical regiments, each of which is identical in strength and organization to the division or corps medical regiment. The functions of these medical regiments is to furnish medical care to the army troops (i. e.,

those units belonging to the army but not assigned to divisions or corps), to furnish such reinforcements as the division and corps medical services may need in emergency, and to evacuate hospital stations of the divisions and corps to the army evacuation and convalescent hospitals. For this latter purpose, the ambulance battalions of the army medical regiments are used.

The evacuation hospital, of which there are twelve in each field army, has a normal capacity of 750 beds, but may be expanded to 1,200 beds in emergency. It receives patients from the hospital stations of division and corps, and also from surgical hospitals, of which mention will be made later. The evacuation hospitals constitute the bottle neck through which all casualties must pass on their way from the combat zone to the hospitals of the communications zone. These evacuation hospitals are classed as mobile, but they must be moved by rail or by army motor transportation. They are normally established from ten to fifteen miles or more from the battle front on railroads leading to the rear and along good roads leading to the front.

The surgical hospital, of which there are ten in each field army, is designed for the initial care of those cases whose condition is so serious as to make it inadvisable to immediately move them from a hospital station to an evacuation hospital. In order that they may carry out their function, surgical hospitals are established near the division hospital stations, so that patients may be transported from the latter to the former by litter bearers or by a minimum distance ambulance trip. They are army units and operate under the army surgeon but are located in the division areas. It must be remembered that the division hospital stations must be prepared to move forward as the division advances, if they are to most effectively function. In order to accomplish this, the army must evacuate them promptly of cases which can be moved, and a surgical hospital must be convenient, so that non-transportable cases can be transferred to it.

The army medical service also has a convalescent hospital, with a capacity of 3,000 cases, which is designed to care for patients whose incapacity will last for a few days or a couple of weeks, convalescent cases from evacuation hospi-

tals, and venereal cases within the army area which require hospitalization.

The army medical service also has three veterinary evacuation hospitals, one veterinary convalescent hospital, a medical laboratory, a medical supply depot, and an aviation medical examining unit. The names of these will give you an idea of their respective functions.

The cavalry divisions belonging to the army have an organization which parallels the medical service of the infantry divisions, except that they each have a medical squadron instead of a medical regiment.

Thus, it can be seen that each army is furnished with its own medical service, equipped to care for its own sick and wounded who will be able to return to the front within a reasonable time, and to do what is necessary to make those requiring longer and definitive hospitalization ready to withstand further transportation to the rear. To give you an idea of the total Medical Department commissioned force of one field army, there will be approximately 1,300 officers in the nine infantry divisions, over one hundred in the two cavalry divisions, about 450 in the three corps medical services, and approximately 1,100 in the army medical service; a total of approximately 3,000, of which, in round numbers, 2,100 will be medical officers.

Behind the field armies will be the Communications Zone, and behind it, the Zone of the Interior, to which reference has already been made. The Communications Zone will have its medical headquarters, general hospitals, station hospitals, hospital centers, hospital trains, medical laboratories, dispensaries, medical supply depots, and also veterinary general and station hospitals.

The general hospital, a fixed unit of one thousand beds, is designed for the definitive treatment of all cases arising in the theater of operations. Its equipment is adequate for all cases of whatever severity. The number of these hospitals in the Communications Zone will depend upon the location of the zone with respect to the Zone of the Interior, the number of troops involved, and other similar factors. Cases will be moved from the evacuation hospitals to general hospitals by means of hospital trains, each of which has a capacity of three hundred recumbent patients.

For economy in operation as concerns both personnel and material, and to facilitate administration and supply, three or more general hospitals will be grouped into a hospital center whenever practicable. Each hospital will function as a separate unit under its own commander, but they all operate under the center commander. This system is like that which prevailed in the World War.

The station hospital is a fixed hospital of two hundred and fifty bed capacity, and such hospitals will be placed at places in the communications zone where there is a sufficient concentration of military personnel to warrant such an establishment. There are intended to care for the hospitalization of local patients, but as they do not have as extensive facilities as a general hospital, it may be necessary at times to send cases from the station to general hospitals. These station hospitals receive cases only from the area or command which they serve, and are not intended for the care of patients from the combat zone.

The other units mentioned as belonging to the zone of communications need no special mention; their titles are indicative of the function which they will perform.

This brief description of the medical service of the army in war will give you some idea of the immensity of the organization, and the numbers of the personnel that will be required to operate it. At the beginning of the World War, there were a little over four hundred medical officers in the Regular Army, and that number was expanded until we had over 30,000 at the end of the war. Is it any wonder that we at times hear complaints that some officer got a promotion while some equally deserving officer did not, or that somewhere some patient did not get all the care and attention he thought his due? But at the beginning of the war, we had no definite plan; we were not prepared because we did not even know what would be needed.

Today, the situation is different. We have a comprehensive plan; we know what troops are to be mobilized and what medical units will be required to care for them. The Regular Army, the National Guard, and the Organized Reserves are carrying on. Many of the medical units which will be required are already organized as far as the commissioned personnel is concerned;

this personnel consisting of officers commissioned in the various branches of the Medical Department Reserve. Many of these officers are fitting themselves for the duty which they will be called upon to perform in the event of war, by pursuing correspondence courses, and by attending meetings of their units for purposes of instruction.

To my mind, this training is vital. I cannot agree with those who say that as far as medical officers are concerned, all that we need is good doctors. It is true that we do need well qualified professional men, but in the army the work of the medical officer is not limited to the practice of medicine as you know it in civil life. In combat, there is the problem of getting the wounded man back from the front to the rear, this without interfering with the movement of troops, ammunition and supplies from rear to front. There is also the problem of feeding, clothing and otherwise caring for and administering the enlisted men of the Medical Department, the housing, feeding and supplying the patients, the problem of sanitation, medical supply, etc. Moreover, if the medical officer attached to a front line unit is to be as efficient as we would like, he must know something about military tactics. He must be able to appreciate the military maneuver that his commander plans to make, in order to be able to so dispose his medical forces that they can efficiently perform their functions. He must know something of the problems of the other services, quartermaster, engineer, etc., so that the plans he makes for the medical service will not interfere with the plans made for the operation of other services. In other words, the medical officer must be able to work as a part of a team, and in order to do this, he needs training.

The medical units which, according to present plans, are to be manned by doctors from the State of Illinois in the event of war—some of these are already organized—, call for some 1,800 medical reserve officers. If a general mobilization ever does occur, it is probable that this number will be doubled. But, of the 1,800 medical reserve officers needed to complete the units which are now or should now be organized, we have but a little over eight hundred, and some of these are not actively carrying on their training. Gentlemen, I think that this is a situation

which everyone of you here tonight can help to correct.

First of all, you can impress upon the young doctor with whom you come in contact, the patriotic duty of joining the reserve corps. Then urge him, and also urge that man who has accepted a commission in the reserve but who is not keeping up with his training, to get busy with the prescribed correspondence courses and to attend the meetings of the unit to which he is assigned. All that is required of a reserve officer to maintain his eligibility for assignment and active duty is to devote twenty-five hours a year to his army work. We in the Regular Army can not make personal contact with all of these men; moreover, in many cases, you who know them intimately and have had experience in the World War, will have a greater influence.

If another war does come—and this God forbid—it is not likely that we will have a condition similar to that existing in 1917, where allies held off the enemy until we got ready. We must have young doctors, and have them now, so that they may learn how to carry on the tasks that will be their lot in war. If we get the required number of young doctors now, and give them the needed training, then we will be able to carry on from the start that vastly important task of efficiently caring for the sick and wounded of the fighting forces, and of promptly converting casualties into replacements and thus keeping up the combat strength. And it must ever be remembered that a highly efficient medical service has an effect more far reaching than the satisfying of humanitarian needs; it makes for the maintenance of a high morale on the part of the troops and of the civil population, for nothing is more destructive of this morale than is a failure to adequately care for the sick and wounded. If we don't get and train these young doctors now, we may not be ready when the need arises.

So, Gentlemen, even though you are past the age when you can expect to do active duty in the event of another war, or for one reason or another are not in the reserve corps today, I feel that you have a patriotic duty as veterans of the last war, a civic duty as citizens of a great State, to do what you can to encourage young doctors to affiliate with the reserve corps; and, after receiving their commissions, to carry on their

training. Today, the State of Illinois has about forty per cent of its quota of doctors in the reserve corps. Personally, I would like to see this State, with which I am at present associated, put over the job and do far better than its forty per cent. I will do my part, and am confident that with your help, we can accomplish the goal. I solicit your hearty cooperation.

907 Chicago Post Office Building.

THE MEDICAL COMMISSION AND ORGANIZED MEDICINE

NORMAN L. SHEEHE, M. D.
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I wonder if there is not some misunderstanding between the men of the State Medical Association and the men of the Medical Commission of the American Legion insofar as veteran facilities are concerned and in which the Medical Commission plays some small part. I know that I have felt this way and I am sure that other doctors have, too, and I believe for the good of all concerned that the situation should be discussed to bring about a clearer conception of the whole thing. In our veteran facilities, we find two groups of men and women receiving treatment. On the one hand, we have the service connected cases, those in which the veteran can trace his disability directly to service. On the other hand, we have others under treatment, who, it is true, are not what we term "service connected" cases. They are, unfortunately, indigent veterans who, because they have no financial means to undergo treatment elsewhere, are necessarily entitled to government aid because of that predicament. They must, however, sign a paper in which they swear they have no visible means of paying for hospitalization and medical care in their own community. I know that some of you will sit back and say, "I know men who have gotten in and are able to pay." That may be so, but unless we, of the medical Commission or Colonel Scott at Hines, have evidence of such a fact we have no means of checking up. If you know of any one in your community who goes to a veterans' facility who is able to pay for such care, send a letter to Colonel Scott or to the

Address before the Veterans' Service Committee Dinner, Eighty-seventh Annual Meeting of the Illinois State Medical Society, Peoria, May 18, 1937.

facility where that patient goes and they will check up on the case. If they find the man is able to pay they will refer him back to his own physician. You will find, as you do in your county hospitals, that there are always a few who will slip in and get aid even though they are able to pay. In defense of both these parties, I want to say that the facilities are anxious to leave these cases back in the home town. To the doctors of the State Medical Society and the Medical Commission belong some part in the solving of that problem. We all have to work together and we have need of still greater co-operation. The doctors were indispensable in the war days, and of course they are indispensable now. Some men who were in the Army are now back in civilian life without any ill effects of the war; others had to enter hospitals. It is for this latter group that we have facilities at the present time.

The Medical Society can, with the Medical Commission, watch the facilities; watch the state and national governments in putting up these facilities and guard against an unnecessarily extravagant building program. Building programs are many times formulated for additional beds in certain hospitals where the need is not so great as perhaps in that of another facility where the waiting list shows conclusively that additional beds are desperately needed.

The disability of the veterans is one of the major problems confronting us today. The disability varies because the penalties of war varied. No veteran came out of the war without having paid a penalty, either in a small or great degree, from having subjected himself to the mental and physical exactions of army discipline. The years taken from the calendar since those days have increased the problems with the adding of the years. As a result, we find our medical problems with the veteran greater in number and greater in intensity—despite the fact we are losing a goodly number each day by death. We must study these problems if we would administer a definite service to the veteran because such service can only come through an understanding of the veteran's problem.

In the bulletin that I sent out some time ago to the men in the Medical Commission, I said that the problem of the Post Surgeon is that of a liaison officer between the Medical Society

and the American Legion, and it need be no problem. That man should cooperate with the American Legion Post of which he is a member and with his state and county societies. It should be his desire to have a "medical night" meeting each year, or may be two or three in the year, at which all the doctors who belong to that post could get together at a dinner and discuss their problems, the veterans' problems, and also the facilities, and formulate some plans which may be brought before the Medical Commission, and in turn to the State Convention. Not only may you bring your problems and suggestions to the Legion State Convention, but you may bring them up before the State Medical Society where you have a very efficient Veterans' Service Commission. Let them figure it out there and then bring it before the Legion State Convention. In that way the doctor becomes familiar with the men in the Legion, and their program and that is one way he can really understand the veterans' problems. That is one way in which we can help the veterans.

There is only one way in which to study the program and to seek a solution to the mistakes as you see them existing at the present time, and that way is to join up with the American Legion or other service group and enter into the activities of that Post. I was talking to a well-known man in Rockford yesterday noon and he was looking at the pin I had on—I belong to the Forty and Eight—and he said, "You know, Norm, that is a mighty fine pin—you belong to the Forty and Eight. I have always belonged to the Legion, though I have never been active and yet I wouldn't give up my membership for anything. I could sever my connections with civic organizations but my Legion membership, I'll always adhere to." I said, "That is a fine thing, Doctor, but why do you not become active? I do not mean that you must work on committees. If you only go to the meetings, you would lend moral support to the Post's officers, which amount of good could never be estimated. There are plenty of things in which you can be of great help, not only in a social way to the men of the Post but in helping them in a medical sense—by helping, with your suggestions, to solve the veteran's problem which is paramount in the American Legion." There are plenty of men in the Post who do not have the true sense of

civic pride in the community because their daily activities do not provide for it. They seem satisfied with their job, to go home, get a good meal and go to bed. In short, the other fellow's business is none of their concern. But the doctor, coming as he does, in contact with various people in the day—learning their problems—is able to render a valuable service to any organization by giving them the benefit of his observations.

I do not mean this as a membership plea for the American Legion entirely. There are those of you who are eligible to other veteran organizations and who do belong to them. It is to you all that I make this plea. Get into those organizations that study the veteran's problems. Your experience, your wisdom, your advice is needed to solve them! Only with your cooperation can the ultimate goal be reached! Only with your cooperation can there be any kind of harmony between the veteran groups and the State Medical Society!

Rockford National Bank Building.

THE AMERICAN LEGION'S CONTRIBUTION TO THE BOY'S STATE AND BIG BROTHER MOVEMENT

LEONARD APPLEQUIST

Senior Vice-Commander, American Legion

AURORA, ILLINOIS

I want to cover very briefly what is one of our important Americanism measures. But before I go into the subject I want to take the opportunity of extending to you the Department Commander's greetings and best wishes for a successful convention. We hear a great deal about the effect of communism upon the youth of America today, and we are ready to believe it because of a thorough investigation on the part of our Department of Americanism. We know there are many false ideas placed in the minds of the youth, and we know the attitude youth has taken toward our government today. This was brought to our attention in one community and it disturbed us very much as to what was taking place among the girls and boys. The Post-Commander was asked to address them on the Government of the United States. After he had com-

pleted his talk covering the early inception of the country, the Declaration of Independence in 1776, the war of 1812 and through the various stages of evolution of this great nation until we had developed it from the Atlantic to the Pacific, he sat down and one of the young ladies arose and asked a question. She said, "for the past two years while attending a certain college, along with many others, we heard a great deal about Americanism, communism and socialism, and we have been asked to study something about these other forms of government and compare them with the government of the United States. We have come to this conclusion, we do not care whether it is Nazism, Fascism, communism or what it is, we believe we should have a change, that we should wipe out the burden we are now under and set up a new government. When we do that we will do the same as in Russia; they were burdened with debt, were under the control of the Czar, so when they had a revolution they destroyed the government and immediately canceled all obligations that government had to the world, and started anew. Therefore, we do not think we should bear the burden of our forefathers. We are willing that we should have a new form of government and cancel all past obligations."

What are they doing? Here is just a little information that I took from the report of Harry S. Low. He has made a study of communism, and knows whereof he speaks. He says, "We find that there are such papers now available as the 'Young Worker,' the official organ for the Young Communist's League, being published in San Francisco. Another one is published at 2 E. 23rd Street, Room 508, New York City. We find the 'New Pioneer,' a magazine published for boys and girls on Fourth Avenue, Brooklyn." It came to the attention of the Americanism Department that there are being established camps to teach the youth of the country the principles of communistic government. The communists know they are not going to change your opinion or that of many others, but they know the youth can be more or less influenced. When they take a boy or girl of fourteen and fit them into that sort of propaganda, when that youth reaches twenty-one they will not worry about revolution because they will be steeped

with that form of propaganda. The youth will be ready to work with the communists.

The suggestion was made to us by a Legionnaire teaching in high school. He said, "why not concentrate the youth in the central part of our state and give them an opportunity to operate the state, county and city governments and learn something about the duties of citizenship. So there was set up a Boy's State at Springfield in 1935. This year we will have nine and in 1938 we expect to have 13 to 16. Then we are going to create a boy's nation and let the youth learn something about the national government. What happened in Ohio last year? At the end of the boy's state in Ohio two youths came up and said, "We come to you, Mr. Legionnaire, to apologize. We came here paid by the communists for the purpose of creating disturbance. After we had been here two days in association with your officers and got an idea of what this government was really all about, we learned that it was not so much the fault of our government, but the confidence we and our forbears had placed in those sworn to administer the various departments of the government had been misplaced. We are going back to employ ourselves for the preservation of the kind of government we have."

In 1935, 250 boys went to Springfield, sponsored by the Legion, the Forty and Eight, the knights of Columbus, the Elks, and other civic and patriotic organizations. Just to give you an idea of how much value this trip is, I am going to tell you a story. One lad who had written an essay on Americanism came from the southern part of the state. His father had taken out his first citizenship papers. This lad won the five dollar prize. He was asked, "What are you going to do with that five dollars?" He said, "During the time I was preparing this essay I talked with my father. He works in a coal mine and the mines have not been very busy. My father feels as though he wants to be a citizen and I am going to give him this five dollars to take out his second papers."

That is where we make a mistake when we do not encourage these people, have meetings, inspire them, teach them that they are a part of this great country. That is our job as Legionnaires. This little Italian boy was going to

take his five dollar prize and purchase his father's second citizenship papers. When he heard about the Boy's State he wanted to go. Our Legion Post said, "Yes, we want to send him." He went to the Boy's State. As part of the program they go to the State House, the Senate Chamber, the House of Representatives, the Supreme Court, and lastly they go to the tomb of the immortal Lincoln. On the day before they were to go to Lincoln's tomb the officer in charge said, "Tomorrow we are going to the tomb of Lincoln, the man of sorrows, who spent most of his life in Illinois and belongs to us; the man we have studied all about. We have learned a lot about America since we have been here the last six days, and Lincoln has had a great deal to do with making America what it is today. Tomorrow we are going to his tomb." The next day they went to Lincoln's tomb, and as these 250 lads turned their faces east where lie the mortal remains of the father of his country, that inspired and illustrious George Washington, the leader of this country in the early days, the custodian of the tomb who had been there for many years, came out with tears in his eyes. He said, "I have seen men in all walks of life enter that tomb and I have never seen so inspiring a sight as I stood there when those 250 boys stood before the sarcophagus and individually saluted the immortal Lincoln."

These boys go there for the small sum of ten dollars and remain seven days. This year we will have room for 1,000. They are sent there because of their leadership, courage and honesty. That is the type of boy that we want to come to Boy's State this year, because he will go back having the courage of his convictions. He will be honest about what he learns down there, and being a leader he is going to inspire all the boys with whom he comes in contact. If we keep up this work we will not worry about Nazism, Fascism or communism getting a hold in this country. Let everyone of us get behind this boy's State. When these boys come back inspired from what they have learned, invite them into your medical meetings and let them talk as they have been inspired.

I appreciate the opportunity of having come before you and having spoken to you.

Elks Club.

SEX CRIMES

JOHN KERCHER, M. D.

CHICAGO

Up to the time of the World War we practically lived in an era of happy tranquillity—every boy was ambitious to find the girl—to establish a home and to raise a family. The girl's ambition was to work for some good family, to learn to cook, wash, sew, knit, to be a good housekeeper, to save some money until she found that Man. They were perfectly happy to be supported, guided, and protected by Man.

Then the War came. On account of the industrial shortage of manpower, everything changed from the former order.

We found ourselves short of domestics, cooks, housekeepers and we found women in men's trousers, climbing high ladders, cleaning and fixing electric street lamps, wearing men's rubber boots and rubber coats and aprons, washing cars, working in ammunition factories, and woman no longer needed the support and protection of man. They were free; making men's wages. No wonder they got drunk with the victory of independence. They could rent their own homes, go when and where they pleased. And while the women won this great victory of independence, hundreds of thousands of men lost their lives, thousands crippled, more thousands shell-shocked. We had thousands of widows and many thousands of orphans, besides the billions of dollars lost, contributed by the American people.

That War was *Man's Mistake*. It will go down in history for future generations as America's greatest blunder.

But now came another mistake, it will be marked a woman's victory by future generations. I refer to the inauguration of prohibition. A law that was passed while several million of our men were in France and other countries fighting to make the world safe for democracy. The Women's Christian Temperance Union in cooperation with the Protestant Federation of Churches, with the Antisaloon League, forming the Prohibition Party, utilized with great success the psychic value of the feminine emotionalism, heightened by the war hysteria. The women's confidence and cooperation was obtained by the ministers' plea that crime would be abolished, no more jails, police, no more drunken husbands

or brothers. Future generations will refer to it as blunder number two.

The entire world is now going crazy. This is nine-tenths true in the United States in the post-war period. Negroes who used to work in the cotton fields in the South, now invaded the best residential district on the south side, in apartments with mahogany and marble trimmings, furnishing them with expensive rugs, pianos, brass beds, victrolas at \$150.00.

And now came 1929. Since then it has been estimated that 5,000,000 women have taken men's jobs, displacing 5,000,000 men, who it should be noted would, following nature's urge, have found a home with a loving wife and children if he had had a job and an earning power.

In the meantime the large majority of women having discovered that they were duped with the prohibition movement, now had to find some other avenue of placement for their heightened emotionalism, and so they regimented themselves into making the world a better place to live in, especially so the U. S. A., by improving our morals. So by concerted action of women's clubs, churches, ministers and political workings, the red light district and prostitution were wiped out, but largely because of the lack of financial support on account of the depression. As one prostitute remarked: "A decent respectable sporting girl couldn't make a living because the boys didn't have the dough."

It should be emphasized that the good moralists have overlooked one very important fact and that is that the sexual impulse is one of nature's functions, as natural as sleep, food and other nature's calls, except that it is the most powerful impulse in all human and animal creation. Sexual intercourse is the oldest institution in the world.

One of Europe's foremost monarchs abdicated as king and emperor of a vast empire for a woman, and what makes the woman? Her sexual anatomy. Another king renounced his throne for a woman and left the country. After some time he came back, but according to newspaper reports the alliance still exists. Trace back history even into the time of Cleopatra, or in old biblical history Potiphar and his daughters. We are no different today. The sexual urge is the motive of many murders. A woman kills another woman fighting for her man. A man kills another man who is trying to chisel in. A big buck deer fights

unto death for his harem. The same with all wild animals. Is it surprising then with still millions of men without jobs, without money, many without homes or mates, many without the ability to work off the surplus energy, the enforced idleness, and the sexual urge ungratified, many with animosity toward women in general for having taken their jobs, that we have now an unusual number of sex crimes or rape?

Now it should also be noted that a man can rape a woman, but a woman cannot rape a man. I am confident from my many years of experience as a physician that if a woman could commit a rape on a man, we would also have women rapists. Just recently I had occasion to visit a family where the man was 81 years of age, and his wife about 75 or 76, both very intelligent. When speaking on this subject I stated that women and girls often suffer from "nerves" and headaches from sexual excitation, when to my surprise the old lady remarked: "Yes, doctor, and even more than men because they cannot go out and find relief."

I herewith recite some sexual histories of women and girls: A—, Young woman 33 to 35, was one of the most beautiful shaped women I have ever seen, but her face—the less said the better. Canadian-French; married, but unhappy on account of her excessive sexual irritation. She was very jealous. Was finally divorced and came to Chicago. Confessed she often thought of killing her husband and committing suicide. Also confessed that she attempted to use a banana when one of those sexual storms was on.

B—, Married, husband a professional confidence man and card shark. Three men formed group, each staying in different hotels to pick up suckers. They posed as stock and bond brokers. They would meet for a friendly game with their victims, often trailed them on railroads and even ocean steamers. One time was caught in Canada and sent to prison for four years. The wife became a prolific masturbator. This history was obtained in a consultation concerning her health. I delivered a rather forceful lecture to her and told her she was a fool. I told her to go out and get a man to satisfy nature's calling. She then informed me of a druggist near by who had tried to make a date with her, and I said, "Well, go ahead—there is your opportunity." Several days later she came to my office in a very depressed, or rather disappointed state of mind, and said that it was the greatest disappointment she had ever experienced. It was a flop. What happened she refused to state. I then lost track of her. But about three years later I received reliable information that B had committed suicide with a big dose of morphine.

C—, Two old maids, sisters, one about 43—looked 53, domineering, puritanical. The younger sister, 35; she

was always reprimanded for putting some powder on her face, and "Horrors!" sometimes even tinting her cheeks. They were well educated, both music teachers. They had never been parted in their lives. Finally the younger one broke away and lived in a small furnished room. I had discovered that she liked a married man. Soon after she kept company with another married man. Then she had several married men. The eldest sister was a neurotic, complained of everything in the medical dictionary. Eventually she moved away. Less than two years after she returned for thorough examination, including a vaginal examination for an imaginary cancer. To my great surprise I found a complete "hymen"—maidenhead. Here was a woman near 50 years of age who had never had sexual experience, but she had masturbated since she was a girl. She informed me her sister had died. Of what? Less than a year after this she jumped out of a 3rd story window committing suicide.

These are only a few examples of my 47 years experience; May, 1890, to May, 1937.

When a woman is thus afflicted, it is usually referred to as a case of nymphomania, and she usually receives great sympathy for her affliction. When a man is thus afflicted, he is a fiend, a monster. It should also be noted that man from the time of the stone age has been the aggressor, the fighter. He fought with the tiger, the leopard, the bear and other ferocious animals. He fought other men to protect his wife, his children and his home, while his wife just looked after the home. Therefore, the difference of the aggressive fighting man and the passive nature of the woman. We could hardly expect a sexual erotic woman to break into a man's bedroom and black-jack the man or to use a brick and commit murder.

I stated before that the entire world was going crazy and according to "Damran, *Medical Record*, Sept. 2, 1936," that the number of patients in hospitals for Mental Diseases in the United States has increased from 63.7 per 100,000 population in 1880 to 263.6 in 1934.

6850 Dorchester Avenue.

Anti-syphilitic effect of bismuth is directly proportional to blood and tissue concentrations of this substance, therefore preparations of bismuth which are soluble in the tissues and fluids of the body should be used. Hanzlik, P. J., *J. A. M. A.*, 107:1985, 1936.

The true University of these days is a collection of books, and all Education is to teach us how to read.—*Carlyle*.

Society Proceedings

COOK COUNTY

JOINT MEETING OF THE CHICAGO MEDICAL SOCIETY AND THE CHICAGO GYNECOLOGICAL SOCIETY

Wednesday, January 19, 1938

PROGRAM

The Sex Hormones: Their Physiological Significance and Use in Practice—Dr. Robert T. Frank, New York, N. Y.

Discussion: Julius Lackner, James H. Hutton, M. Edward Davis, Williard O. Thompson.

CHICAGO MEDICAL SOCIETY

Wednesday, January 26, 1938

PROGRAM

Cancer of the Colon and Rectum—Dr. Fred W. Rankin, Lexington, Ky.

Discussion: Karl A. Meyer, Carl B. Davis, Alfred A. Strauss.

JEFFERSON-HAMILTON SOCIETY

Five veteran doctors who have practiced medicine for more than half a century were appropriately honored in a dinner given for them by the Jefferson-Hamilton Medical Society at Hotel Emmerson, January 25. Dr. C. M. Dixon, head of the organization, presided.

The five, who were welcomed into the Fifty Year Club and presented with lapel buttons designed by the Illinois State Medical Society, were Dr. W. K. Parker of Dix, Dr. W. W. Hall of McLeansboro, Drs. W. R. Ross, Hugh Peavler and F. W. Patton, all of Mt. Vernon.

Dr. Andy Hall, who is chairman of the Fifty Year Club organization, delivered the presentation address and each of the five club members responded with appropriate addresses—relating many interesting incidents connected with the practice of medicine 50 years ago.

Interesting facts brought out in medical science in the past 50 years in the address of Dr. Hall included: The average life of man today is 60 years, the average life of woman 64 years. Fifty years ago, average life was about 41 years.

Fifty years ago the average cases of typhoid in Illinois for a year were 20,000 and it was fatal to an average of 2,000 persons. At the present time there are usually about 3,000 cases of typhoid in this state and approximately 300 persons die from the disease.

Fifty years ago approximately 3,600 children died in Illinois from diphtheria each year, while now only about 400 succumb to this disease.

The infant mortality was then about 100 for every 1,000 birth, while it is now about 40 for 1,000 births.

Short talks were also made last night by most of the physicians present, as well as Rev. Cyrus Maulding, who was a guest of the society.

The inclement weather and dangerous condition of the roads prevented many attending who otherwise would have been present.

Facts were brought out concerning the experience of physicians who have practiced in this state for 50 years or more.

When these physicians started to practice they could not obtain diphtheria antitoxin, rabies serum, serum to prevent tetanus or lockjaw, typhoid inoculation, insulin, toxin antitoxin, meningitis serum and many other things which today are simply taken for granted.

The Illinois State Medical Society decided to honor these pioneers of health by making them members of the Fifty Year Club.

Marriages

RICHARD CLARK BENKENDORF, Bushnell, Ill., to Miss Celeste O'Brien of Chicago, Nov. 27, 1937.

MILTON E. BITTER to Miss Alberta A. Kindred, both of Quincy, Ill., in November 1937.

Personals

Dr. Alfred Lewy, 25 East Washington Street, Chicago, will address the Rock River Valley, Eye, Ear, Nose and Throat Society at Rockford on February 15, 1938. Subject, "Intracranial Diseases of Otitic Origin."

Dr. M. Herbert Barker addressed the Will-Grundy County Medical Society, January 12, on the subject, "Hypertension and Its Treatment."

Drs. G. W. Royston of St. Louis and Simon A. Wile addressed the Hancock County Medical Society January 10. Their subjects were "Management of the Puerperium and Its Complications," and "Prophylactic Use of Serums and Vaccines."

Drs. Edmond F. Foley and Paul Holinger presented a program on pneumonia, before the Bureau County Medical Society January 11. Their subjects respectively were "Diagnosis and Treatment of Pneumonia," and "Bronchoscopic Aspects of Unresolved Pneumonia."

Dr. Meyer Solomon gave a talk at the Edward Hines, Jr., Hospital on Mental Health and Tuberculosis under the auspices of the Chicago Tuberculosis Institute, on January 11.

Dr. Robert S. Berghoff addressed the Fort Wayne Medical Society, Fort Wayne, Indiana, subject "Heart Disease," January 18.

Dr. H. Close Hesseltine spoke on "Management of Puerperal Sepsis," and Dr. Ralph A. Reis on "Difficulties of Obstetrical Diagnosis," before the doctors of Jefferson-Hamilton, Wayne, Franklin and Saline Counties, at Benton, Illinois, January 27.

Drs. E. L. Cornell and Philip Rosenblum presented a program on obstetrics and pediatrics before the doctors of Jasper, Lawrence and Crawford Counties, January 18 at Robinson.

Drs. A. C. Rambar and M. E. Davis presented a pediatric and obstetrical program before the doctors of Iroquois and Ford Counties at Watseka January 20.

Dr. Edwin W. Ryerson read a paper on "Ununited Fractures" at the meeting of the American Academy of Orthopaedic Surgeons January 18 at Los Angeles, California.

Dr. Joseph Shanks was appointed Eye, Ear, Nose and Throat surgeon to the Courtesy Staff of St. Mary of Nazareth Hospital of Chicago, on January 17, 1938.

Dr. Cecil S. O'Brien, Iowa City, discussed "Staphylococic Conjunctivitis" before the Chicago Ophthalmological Society January 17.

Dr. Andrew F. Barnett, Hines, has been appointed managing officer of the Anna State Hospital succeeding the late Dr. Ralph A. Goodner.

Dr. Francis E. Senear, Chicago, discussed "Early Diagnosis and Treatment of Syphilis" before the St. Clair County Medical Society January 6.

The Chicago Pathological Society was addressed January 10 by Dr. William H. Sweet, among others, on "Toxic Changes in the Spinal Cord Resulting from Spinal Anesthesia."

Dr. Loran E. Orr, formerly of Greenview, has been appointed coordinating epidemiologist to the state department of health, Springfield, according to the *Illinois Health Messenger*.

Dr. Ralph L. Ferguson, formerly of the department of pathology, Ohio State University School of Medicine, has been appointed associate professor of bacteriology at Loyola University School of Medicine.

A symposium on lymphoblastoma was presented before the Chicago Roentgen Society January 13 by Drs. Sol R. Rosenthal, Louis R. Limarzi, Ford K. Hick, Adolph Hartung and Theodore J. Wachowski, all members of the faculty of the University of Illinois School of Medicine.

The Rock Island County Medical Society was addressed January 11 by Drs. Roger T. Vaughan and Philip Thorek, Chicago, on "Abdominal Auscultation." Dr. Meredith H. L. Ostrom, Rock Island, read a paper on "The Significance of Pain About the Ear."

Dr. Vernon C. David, chairman of the department of surgery, Rush Medical College, delivered the fourteenth Lewis Linn McArthur Lecture of the Frank Billings Foundation at the Institute of Medicine of Chicago, January 28; his subject was "A Consideration of Some Etiological and Pathological Factors in Cancer of the Large Bowel."

Dr. Arthur E. Hertzler, professor of surgery, University of Kansas School of Medicine, Kansas City, will deliver the annual Stephen Walter Ranson Lecture at Thorne Hall, Northwestern University Medical School, February 15, under the auspices of Theta of Phi Beta Pi. His subject will be "The Thyroid Heart."

Dr. Alban L. Mann has resigned as health officer of Elgin, a position he has held since 1912. Although he retired from active service January 1, Dr. Mann will serve the city health department in an advisory capacity until June 30. A resolution was recently adopted by city council members in which Dr. Mann's services were termed "long, faithful and distinguished." He is 78 years of age.

Dr. Henry W. Gentles, director of the first aid service of the Chicago chapter, American Red Cross, was guest of honor at a testimonial dinner, December 14. The occasion was the retirement of Dr. Gentles after forty-five years of service with the Red Cross; in the future he will act as the chapter's first aid consultant. He has been in charge of the Chicago chapter's first aid service since its organization and was the founder of the uniformed volunteer first aid corps.

Dr. John O'Donoghue of Chicago addressed the Kankakee County Medical Society January 13 on "Gall Bladder Disease, Diagnosis and Treatment."

Dr. Paul D. White of the Massachusetts General Hospital, Boston, will give a paper on "The Nature, Diagnosis and Treatment of Heart Failure" at the March 3 meeting of the North Side Branch of the Chicago Medical Society, at 8:00 P. M., in the Drake Hotel.

Dr. Edmund Jacobson, Laboratory for Clinical Physiology, Chicago, addressed the St. Louis Medical Society on "The Tense Patient in General Medical Practice," on January 18, 1938. Following the address, the Society suspended its By-Laws, bestowing on him Honorary Life Membership.

Dr. Max Thorek addressed the staff of the Evangelical Deaconess Hospital (Milwaukee) and the senior medical students of Marquette University on Tuesday, January 4 and the staff of Woodlawn Hospital on January 7 on the subject of "Electrosurgical Obliteration of the Gall-bladder."

Dr. Paul H. Harmon, Chicago, gave a lecture on "Poliomyelitis" to the students and the medical faculty of the University of Texas Medical School, Galveston, on January 12, 1938.

Dr. Paul H. Harmon, Chicago, addressed the Warren County Medical Society, Monmouth, on "Prophylaxis and Treatment of Poliomyelitis" at an evening meeting on January 24, 1938.

News Notes

—The state department of health is organizing a new district health unit to include East St. Louis, Centerville, Canteen and Stites. The East Side health district will be in charge of Dr. Robert C. Farrier, who recently resigned as director of the Delta County Health Department with headquarters in Escanaba, Mich. The headquarters of the new unit will be in East St. Louis, it is reported.

—A new \$125,000 nursery for The Cradle will be constructed in Evanston, beginning April 1. The Cradle was established in March, 1923, to receive and prepare homeless babies for adoption. It has cared for a total of 3,363 babies, with only seventy-six deaths. Preliminary plans for the new building call for the erection of a modern fireproof three-story structure of white limestone, roofed with slate, at the corner of Simpson Street and Ridge Avenue.

—The Chicago Tuberculosis Institute January 1 began distribution of tuberculin to physicians of Chicago and Cook County. On request from a physician, either by telephone or by letter, the institute will send by return mail a supply of first and second strength purified protein derivative sufficient for ten skin tests. Included will be a card on which additional requests may be made when the supply on hand is exhausted or becomes old. There is no charge for the service. The institute hopes in this manner to facilitate tuberculin skin testing as an aid to early diagnosis of tuberculosis.

—A series of lectures for the nursing staff of the Edward Hines, Jr., Hospital, Hines, began

January 11 under the auspices of the Chicago Tuberculosis Institute. Dr. Meyer Solomon gave the first lecture, on "Mental Health and Tuberculosis." Other lecturers include the following Chicago physicians:

Dr. Hugo O. Deuss, Treatment of Pulmonary Tuberculosis, January 18.

Dr. Paul A. Teschner, assistant director, Bureau of Health and Public Instruction, American Medical Association, The Nurse of Today, January 25.

Dr. Franklin R. Fitch, Gonorrhea and Syphilis—Twin Public Health Problems, February 1.

Dr. Jerome R. Head, Childhood Type of Tuberculosis, February 8.

Dr. Robert S. Berghoff, The More Common Forms of Heart Disease, February 15.

—A major epidemic wave of measles appears to be impending in Illinois, a release from the state department of health announced January 14. Cases recorded rose 100 percent the week of the report. About 400 cases a day were being reported. During the twenty-four hours ended 8 a. m. January 15, eighty-two new cases of measles were reported to the Chicago Board of Health, bringing the number of cases this year to 1,570. The total reported in 1937 was 5,904. During December 293 homes were placed under quarantine in Waukegan, eighty-eight homes in Wood River were in quarantine January 6, and thirty-two in Pontiac during the month ended January 5. The schools were closed in Du Quoin when 400 and 500 cases were reported, and schools were also closed at Stonefort and Muddy. There were 297 cases in Bloomington, January 10. Thirty cases of smallpox were reported in seventeen families in Nameoki January 5, and one case in Waukegan, January 11.

—At a meeting of the Douglas Park Branch of the Chicago Medical Society January 18 Dr. Aaron Arkin discussed the present-day concept of hypertension from the clinicopathologic view and Dr. Louis N. Katz from the physiologist's view. Dr. Stanley Gibson addressed the Southern Cook County Branch January 18 on "Childhood Diseases and Their Immunological Aspects." At a meeting of the West Side Branch January 20 Dr. Charles Marshall Davison showed a motion picture on "The Technic of Thyroidectomy." The Jackson Park Branch was addressed January 20 by Drs. Edward J. Stieglitz on "Renal Function"; S. Kenneth Robinson, "The

Nature of the Anuria and Uremia After Surgical Operation and Blood Transfusion"; Leon Unger, "Migraine," and Francis P. Hammond, "Behind the Scenes in Medical Ethics." Dr. James K. Stack discussed "Injuries of the Wrist" before the Calumet Branch January 21. The Northwest Branch January 27 heard Drs. Herman L. Kretschmer discuss "Problems in the Diagnosis of Tumors of the Kidney." At a meeting of the Irving Park Branch January 25 Dr. George L. Apfelbach spoke on "Emergency Trauma—First Aid That Aids Later Reconstruction."

Deaths

HERMAN ROBERT BAUMGARTH, Chicago; Wisconsin College of Physicians and Surgeons, Milwaukee, 1898; a Fellow, A. M. A.; aged 69; on the staff of the Lutheran Deaconess Hospital, where he died, November 12, 1937, of arteriosclerosis and hypertension.

CHARLES S. BRANNAN, Albion, Ill.; Rush Medical College, Chicago, 1897; member of the Illinois State Medical Society; aged 70; died, November 8, 1937, in the Welborn-Walker Hospital, Evansville, Ind., following an operation for hernia.

JOHN E. BURBY, Peoria, Ill.; Baltimore Medical College, 1895; aged 67; died, November 9, 1937, of cerebral hemorrhage.

WILLIAM JOSEPH CARTER, Mattoon, Ill.; St. Louis University School of Medicine, 1905; a Fellow, A. M. A.; Fellow of the American College of Surgeons; on the staff of the Methodist Memorial Hospital; aged 61; died, November 23, 1937, of angina pectoris.

JOHN ULYSSES DAY, Jacksonville, Ill.; Barnes Medical College, St. Louis, 1908; aged 55; died, October 19, 1937, of dilatation of the heart.

FRANK FITZGERALD, Morrison, Ill.; Rush Medical College, Chicago, 1886; member of the Illinois State Medical Society; aged 80; died, October 24, 1937, of carcinoma of the sigmoid.

CALVIN A. FRAZEE, Springfield, Ill.; Chicago Homeopathic Medical College, 1887; member of the Illinois State Medical Society; past president of the Sangamon County Medical Society; aged 74; died, October 4, 1937, of acute dilatation of the heart, arteriosclerosis and hypertension.

ELMER ELLSWORTH HAGLER, Springfield, Ill.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1890; member of the Illinois State Medical Society and the American Academy of Ophthalmology and Oto-Laryngology; Fellow of the American College of Surgeons; past president of the Sangamon County Medical Society; member of the advisory board during the World War, and district chairman of the National Council of Defense; at one time demonstrator of ophthalmic and aural surgery and clinical ophthalmology and otology at his alma mater; aged 74; on the staff of St. John's Hospital, where he died, October 17, 1937.

CHARLES E. HARDIN, Flat Rock, Ill.; Barnes Medical College, St. Louis, 1904; member of the Illinois State Medical Society; aged 58; died, November 9, 1937, of carcinoma of the sigmoid and rectum.

ALFRED HARTMAN, Chicago; Chicago Homeopathic Medical College, 1898; Hahnemann Medical College and Hospital, Chicago, 1905; member of the Illinois State Medical Society; aged 68; died, November 15, 1937, in the South Chicago Community Hospital, of carcinoma of the prostate.

FRED CLIFTON HONNOLD, Glencoe, Ill.; Rush Medical College, Chicago, 1896; aged 65; died, October 14, 1937, in the Highland Park (Ill.) Hospital, of cerebral hemorrhage.

RICHARD HERMANN JAFFÉ, Chicago; Medizinische Fakultät der Universität Wien, Austria, 1913; professor of pathology at Rush Medical College and the University of Illinois College of Medicine; member of the American Association of Pathologists and Bacteriologists and the American Society for Experimental Pathology; since 1922 director of laboratories at the Grant Hospital; head of the department of pathology and since 1928 director of laboratories at the Cook County Hospital; aged 49; died, December 17, 1937, of coronary thrombosis.

FRANKLIN CALLENDER JESSUP, Chicago; Chicago Medical School, 1922; a Fellow, A. M. A.; aged 55; died, November 19, 1937, in the Post Graduate Hospital and Medical School, of cardiovascular renal disease and injuries received in an automobile accident.

CECIL JAMES JOHNSTON, Canton, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1910; served during the World War; formerly city physician; aged 53; died, October 6, 1937.

HARRY CLAYTON LOVELESS, Griggsville, Ill.; St. Louis College of Physicians and Surgeons, 1904; a Fellow, A. M. A.; past president of the Pike County Medical Society; served during the World War; aged 60; died, October 7, 1937, in Jacksonville, of arteriosclerosis and cerebral hemorrhage.

EUGENE A. MOULTON, Chicago; Hahnemann Medical College and Hospital, Chicago, 1906; member of the Illinois State Medical Society; served during the World War; formerly associate professor of materia medica at his alma mater; on the staffs of the Belmont and the Illinois Masonic Hospitals; aged 60; died, October 13, 1937, of chronic myocarditis.

MALCOLM PFANNEBECKER, Chicago; Loyola University School of Medicine, Chicago, 1926; aged 39; died, October 7, 1937, in the Mercy Hospital, of leukemia.

CHARLES FREMONT ROSS, Saunemin, Ill.; Rush Medical College, Chicago, 1881; aged 80; died, October 15, 1937, in Cleveland, Ohio, of cerebral hemorrhage.

RICHARD H. STREET, Chicago; Hahnemann Medical College and Hospital, Chicago, 1898; a Fellow, A.M.A.; formerly professor of otolaryngology at his alma mater; Fellow of the American College of Surgeons; on the staffs of the Chicago Memorial and Illinois Masonic Hospitals; aged 63; died, October 23, 1937, of coronary sclerosis and arteriosclerosis.

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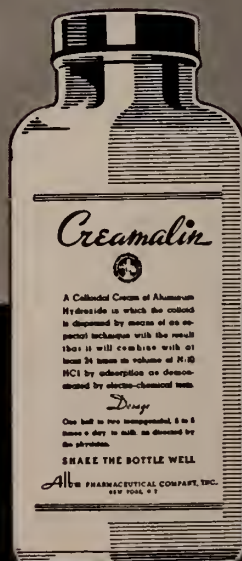


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MANAL OF CLINICAL AND LABORATORY TECHNIC. By Hiram B. Weiss, A. B., M. D., F. A. C. P., Associate Professor of Medicine, College of Medicine, University of Cincinnati, Cincinnati, Ohio; and Raphael Isaacs, A. M., M. D., F. A. C. P., Associate Professor of Medicine, Assistant Director of the Thomas Henry Simpson Memorial Institute for Medical Research, University of Michigan, Ann Arbor, Mich. Fifth Edition, Reset. 141 pages. Philadelphia and London: W. B. Saunders Company, 1937. Cloth, \$1.50 net.

This Manual provides a ready reference to the gross details of the most common laboratory tests; A convenient summary of certain routine forms and data used in the laboratory and clinic; an available source of some of the newer tests, descriptions some of which are not as yet available in the standard text books.

A PRIMER FOR DIABETIC PATIENTS: By Russell M. Wilder, M. D., Ph. D., F. A. C. P., Professor and Chief of the Department of Medicine of The Mayo Foundation, University of Minnesota; Head of Section on General Metabolism, Division of Medicine, The Mayo Clinic. Sixth Edition, Reset. 191 pages. Philadelphia and London: W. B. Saunders Company, 1937. Cloth, \$1.75 net.

The Primer contains the substance of the instruction given in the Diabetic school at the Mayo Clinic. Brief sections are addressed to physicians, but otherwise medical terms have been avoided in an effort to tell what is important for the patient to know in language which he can understand.

SURGICAL PATHOLOGY OF THE DISEASES OF THE NECK. By Arthur E. Hertzler, M. D. 206 illustrations. Philadelphia, Montreal and London. J. P. Lippincott Company. 1937. Price \$5.00.

This book is largely a clinical and operating room study. Many photographs are presented which show the early and progressive appearance of the disease under consideration.

PRENTICE-HALL 1938 EXECUTIVE DATA BOOK. Prentice-Hall, Inc. New York. Price \$1.00.

This handy little volume of 195 pp. —16 maps should appeal to every business and professional man. It provides a convenient place to jot down important engagements or ideas he wants to remember. More important, it offers a quick source for the hard-to-find business facts he so frequently needs. It should appeal as well to the man who wishes to send, at the end of the year, a memento that will be remembered as one of quality as well as one of utility.

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SURGICAL PATHOLOGY OF THE DISEASES OF THE NECK. By Arthur E. Hertzler, M. D. 206 illustrations. Philadelphia, Montreal & London. J. P. Lippincott Company. 1937.

This book is largely a clinical and operating room study. Many photographs are presented which show the early and progressive appearance of the disease under consideration.

MENTALITY AND HOMOSEXUALITY. By Samuel Kahn, M. D. Boston. Meador Publishing Company. 1937. Price \$3.00.

This book deals with the methods of getting certain information and also with mental, psychological, physical and sociological factors which appeared to be the most prominent characteristics in a large group of homosexuals, all of whom were incarcerated in a special division of the N. Y. Penitentiary for men and Women's Workhouse and Correction Hospital for women.

THE PHYSICIANS BUSINESS PRACTICAL AND ECONOMIC ASPECTS OF MEDICINE. By George D. Wolf, M. D. 57 illustrations in the text. Philadelphia, London, Montreal. J. B. Lippincott Company. 1938. Price \$5.00.

This new book discusses the practical and economic aspects of medicine. It is not a small book but a truly inclusive reference work on the business side of practice.

OPERATIVE GYNECOLOGY. By Harry Sturgeon Crossen, M. D., and Robert James Crossen, M. D. Fifth Edition. 1264 illustrations including three colored plates. St. Louis. The C. V. Mosby Company. 1938. Price \$12.50.

This edition has been entirely revised and reset. The new knowledge touches every gynecologic subject, and for its incorporation the book has been extensively rearranged and largely rewritten.

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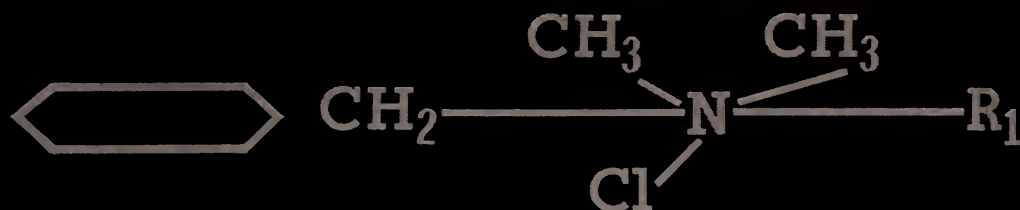
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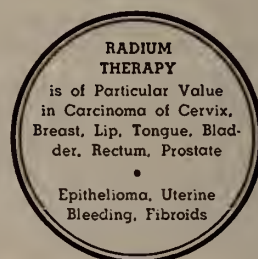
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Chronic syphilis of all types, if treated with a sufficient series of hyperpyrexia treatments, shows remarkable improvement in over 70 per cent. of cases. Active chemotherapy is administered along with fever-heat treatments. Potter, Redewill and Longley: *California & West. Med.* 45:402 (Nov.) 1936.

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PRESENT CONCEPTS OF ACUTE CORONARY OCCLUSION: CLINICAL LECTURE AT ATLANTIC CITY SESSION

The concepts of acute coronary occlusion that Charles C. Wolfert, Philadelphia (*Journal A. M. A.*, Nov. 27, 1937), emphasizes in this discussion are: 1. The disease is one of the major causes of death after the fourth decade. There is no evidence on which to decide whether its frequency is increasing. 2. Little is known regarding its fundamental etiologic factors. Certain definite relationships to age, sex, race, diabetes mellitus and hypertension have been discovered. The influence of heredity, habits of life, occupation, physical and mental strain, or overwork, have been much discussed but have not been demonstrated clearly. 3. The evidence at hand suggests that collateral coronary circulation is not active in normal hearts and apparently develops only when there is need for it. The course of events after coronary occlusion, particularly the occurrence of myocardial infarction, depends on such factors as the size and position of the vessel obstructed, the rapidity of development of occlusion and the integrity of the adjacent circulation. 4. Acute coronary occlusion is usually an accident in the course of coronary arteriosclerosis. 5. Progress in the technique of electrocardiography has recently been made and the diagnostic value of this procedure enhanced. 6. Combined clinical and electrocardiographic study is valuable. 7. There is a wide range in the figures obtained by various workers for mortality during attacks. Statistics show that, among patients who survive attacks, excellent recovery is the exception rather than the rule. The hazard of cardiac deterioration, subsequent attacks or both is great.

SURGICAL RELIEF OF IMPOTENCE: FURTHER EXPERIENCES WITH NEW OPERATIVE PROCEDURE

Oswald S. Lowsley and James L. Bray, New York (*Journal A. M. A.*, Dec. 19, 1936), confine their discussion to sexual inefficiency resulting from traumatism of the perineum following an external blow or surgical operation, inflammatory lesions of the perineum resulting in extensive scar formation, lack of muscle tone and advancing age. Animal experiments indicate that ribbon gut is the best material for use in shortening the ischiocavernosus and bulbocavernosus muscles, as they do not cut through or cause necrosis. Fifty-one men have been operated on by shortening the ischiocavernosus muscle on each side and plicating the bulbocavernosus muscle. In order to accomplish the desired result, the operation must be skilfully performed, with just the right amount of shortening of the muscles. If the muscles are too tight, a constant painful erection will result; if not tight enough, satisfactory erections will not be produced. The success of the operation apparently depends on the use of ribbon gut, which does not tear through the delicate muscles as does ordinary twisted catgut. Thirty-one of the fifty-one patients have been relieved of their impotence. Of the eight unsuccessful

cases, four were men more than 63 years of age. The most spectacular cures have been achieved in those rendered impotent by traumatic injuries to the perineum due to operation, rupture of the urethra by straddle injuries or other violence. The operation should not be attempted in patients with psychic impotence, persons who have had the nervous chain broken such as in cases of old syphilis and in patients of advanced age with high blood pressure. There is nothing thus far to indicate that the relief will be other than permanent, although sufficient time has not elapsed for absolute certainty on this point.

COMPARISON OF ANALGESIC ACTION OF PANTOPON AND MORPHINE SULFATE

J. M. Hayman, Jr., and Herbert Fox, Cleveland (*Journal A. M. A.*, Nov. 27, 1937), have attempted to determine whether any differences could be detected in the analgesic effects of pantopon and morphine, either beneficial or deleterious, when these were given as objectively as possible. The plan of the experiment was to administer the drugs in varying order to patients requiring morphine, in such a manner that neither the patient nor the observer would know which drug had been given. Information was sought on two questions: (1) whether the method could detect differences in the effect of dosages of one-sixth grain (0.0108 Gm.) and one-fourth grain (0.0162 Gm.) of morphine sulfate, and (2) whether the effect of pantopon differed from either dosage more than the two dosages of morphine sulfate differed between themselves. It was noticed that the analgesic efficiency of one-third grain of pantopon is practically the same as that of one-fourth grain of morphine sulfate, or, in other words, that it is not materially greater than that of its morphine content. A striking point in the whole study was the variability of relief afforded the same patient at different times by the same drug as well as by the different drugs at different times. This has impressed the authors with the fact that the factors contributing to the condition of a patient are so complex and so variable from time to time that assay of the relative merits of two drugs is extremely uncertain unless the one shows a consistent superiority under all conditions of administration.

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Endocrine sterility is very frequently due to hypofunction of the anterior pituitary. In ovarian hypofunction secondary to anterior pituitary failure, simultaneous administration of both pituitary gonadotropic principles seems to be the best therapy. Chute, R., *J. A. M. A.* 107:1853, 1936.

The antipericious anemia principle of Castle is shown to be elaborated by the pyloric glands as well as by the glands located in the cardiac portion of the stomach, and by Brunner's glands in the duodenum. The fundus secretes only pepsin and hydrochloric acid. These conclusions were reached after considerable investigation of the relationship of the pyloric glands and Brunner's glands to pernicious anemia. Meulengracht, E., *Z klin. Med.* 130:468 (Aug. 18), 1936.

The gonadotropic hormone is of definite value as an aid to surgery in the treatment of the undescended testicle. The authors consider the use of hormonal therapy as a definite aid preceding or following surgical treatment of cryptorchidism. It is suggested that this hormone should be given early and the total dosage required would probably be between 1700 and 4000 rat units. Deming, C. L., *J. Urol.* 36:274 (Sept.), 1936.

Vitamin C deficiency probably exists in all cases of Addison's disease, the degree of deficiency paralleling the severity of the disease. This factor leads to the theory that vitamin C may act in the body to stabilize adrenalin and the cortical hormone, or that it may play a part in the regulation of pigmentation. Wilkinson & Ashford, *Lancet* 2:967, 1936.

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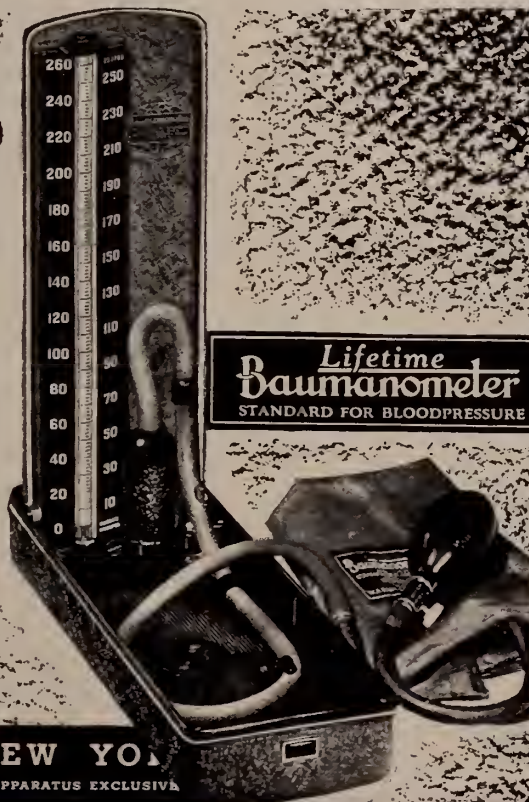
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Relationship between vitamins and hormones is indicated in the report that adrenalectomized animals can be kept alive with large quantities of vitamin B₂ (flavin phosphoric acid). Flavin itself exerted very little effect. Verzar & Laszt, *Z. Vitaminf.* 5:265 (Oct.) 1936.

Recently the same authors have announced that inhibition of absorption of glucose from the intestinal tract after adrenalectomy is due to absence of the cortex. since normal absorption can be restored by administering cortical hormone (*Nature* 138:844, 1936).

Scarlet Fever Antitoxin given routinely by intravenous or intraperitoneal injection in doses of 10 to 20 cc. reduced the incidence of otitis media to one-third, and of nephritis to one-seventh that of the controls. In this report intraperitoneal injection is favored because of its simplicity and freedom from danger. Banks, H. S. *Lancet*, 2:559, 1936.

Sensitization to milk may result from its use in non-specific foreign protein therapy. The 27th injection of a defatted milk preparation produced severe asthma and unmistakable shock. Clinical and experimental data leave little doubt that potentially dangerous sensitization can be established by use of proteins in non-specific parenteral therapy. Bernstein & Ginsberg, *J. A. M. A.* 108:193, 1937.

Hyperemesis gravidarum. Six patients with hyperemesis gravidarum recovered under treatment with Eschatin. A 5-cc. dose intramuscularly often affords complete relief, but in some cases the dose has to be repeated once or twice. Street, R. A. *Mississippi Doctor* 14:17 (Nov.) 1936.

Immunization against diphtheria is best carried out by either of the following methods: (1) two injections of alum precipitated toxoid with an interval of several

months between; or, (2) three injections of plain toxoid with intervals of several weeks between the injections. Cooke J. V., *J. Pediat.* 9:641, 1936.

Syphilis in elderly persons requires modification of routine anti-syphilitic therapy. Realizing that further observation is necessary before the comparative value of this new arsenical can be established, the author states, "it is possible that Mapharsen will be the arsenical of choice for elderly patients because of the relatively few complications and reactions which have been observed following its administration." Netherton, E. W., *Cleveland Clin. Quart.*, 3:205, 1936.

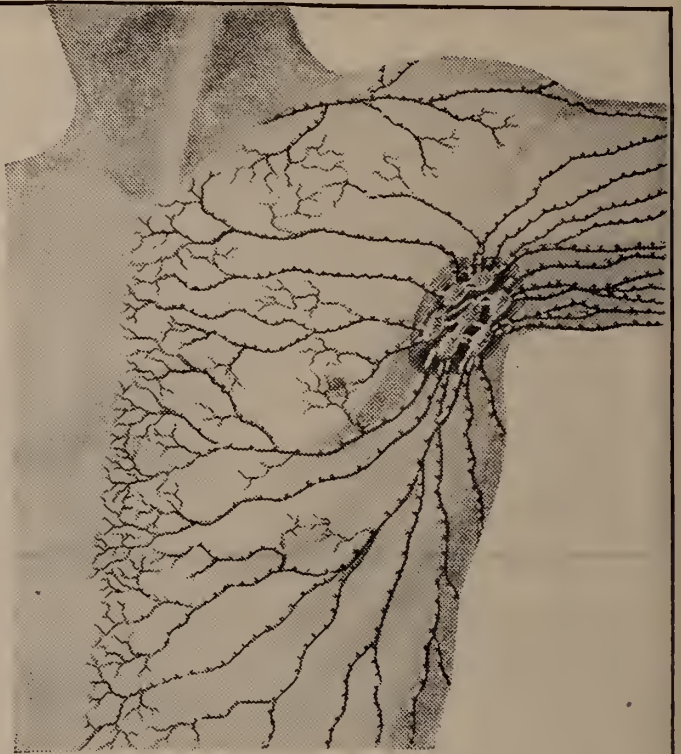
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Polyneuritis occurring in pernicious anemia rapidly cleared up following parenteral administration of vitamin B₁. This work is further proof that a deficiency of vitamin B₁ is an etiologic factor in polyneuritis. Ungley C. C., *Abst. Quart. J. Med.* 29:531, 1936.

Sodium morrhuate is the drug of choice in the treatment of small superficial varicosities. Solutions of quinine are effective in this connection but are likely to cause unpleasant reactions. McAusland, S., *Lancet*, 1:1034, 1936.

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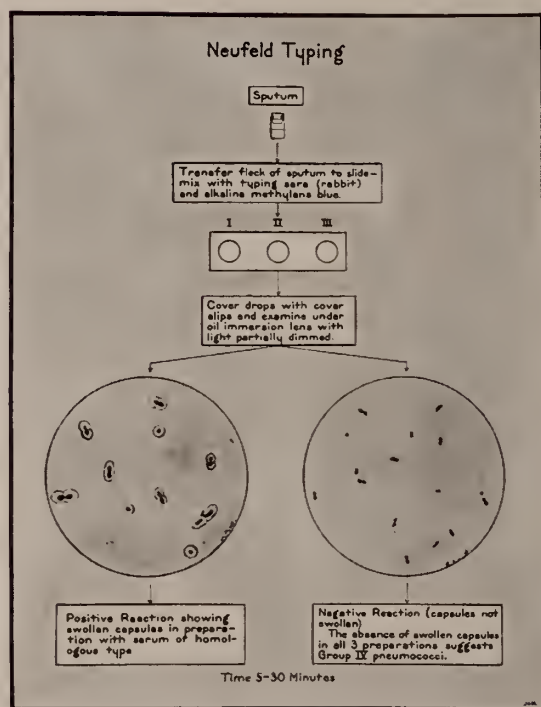
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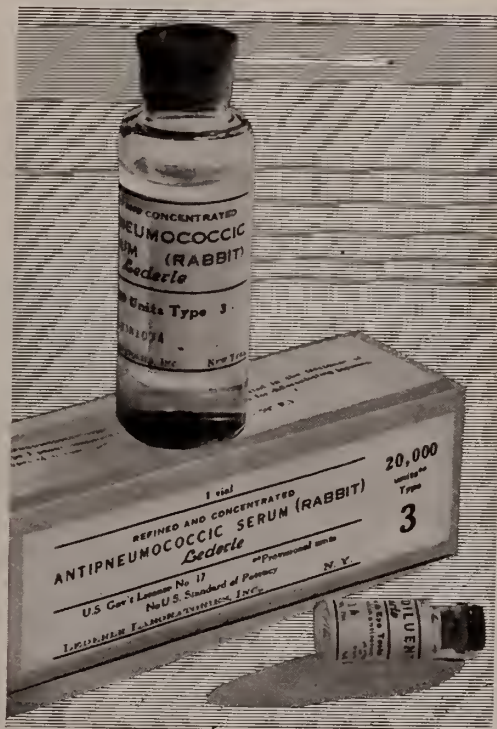
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NINETY-EIGHTH ANNUAL MEETING AT SPRINGFIELD, MAY 17, 18, 19, 1938

Entered as Second-class Matter July 21, 1919, at the Post Office, Oak Park, Illinois, under the Act of March 8, 1879. Acceptance for mailing at special rate of postage provided for in Section 1102, Act of October 8, 1917, authorized July 15, 1918.
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For NERVOUS DISORDERS

(Chicago Office—1823 Marshall Field Annex
Wednesdays, 1-3 P. M.) Central 1162.

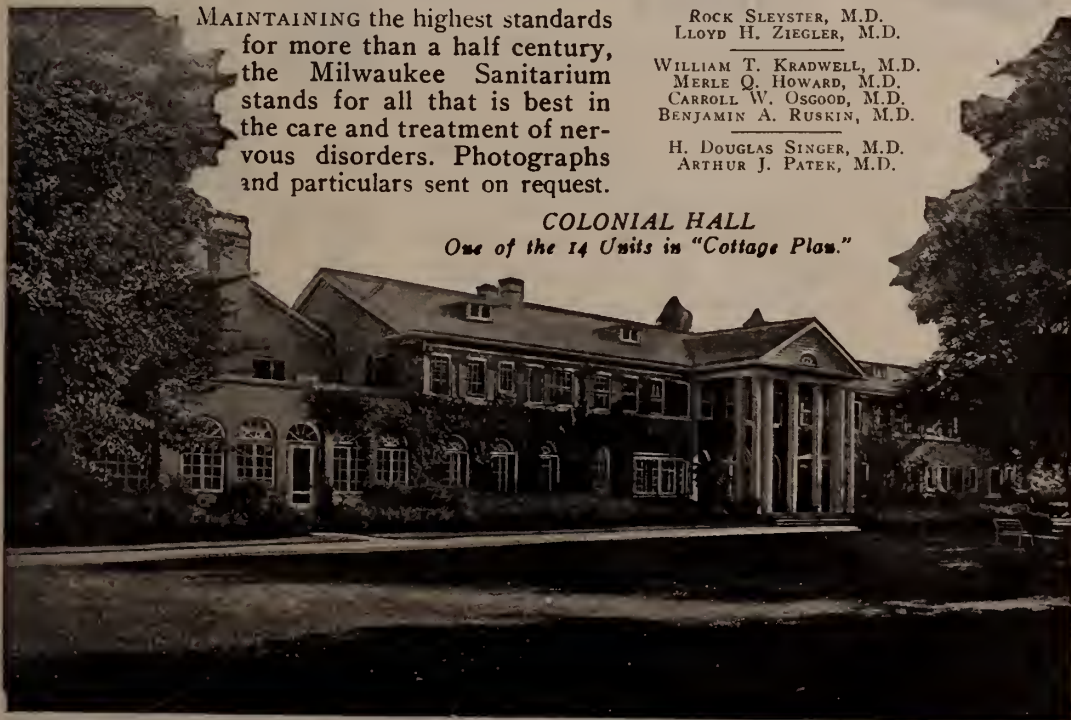
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WHAT ARE THE Indications?

ALTHOUGH they differ in action, Ammonium Mandelate and Serenium are both used for the treatment of genito-urinary infections. Both are effective and convenient to use.

Ammonium Mandelate produces a bactericidal urine—Serenium is bacteriostatic. Each is supplied in tablet form.



AMMONIUM MANDELATE

It is more effective where bacilli are the causative micro-organisms. Its use is indicated in acute and chronic cystitis, pyelitis (pyelonephritis), and other infections of the genito-urinary tract in which the ketogenic diet has been used. It overcomes many of the disadvantages of this diet.

Ammonium Mandelate Squibb (Mandamon*) in compressed tablet form causes less distress than liquid preparations. It is available in $7\frac{1}{2}$ -grain tablets—bottles of 200 and 1000 and in $3\frac{3}{4}$ -grain tablets—bottles of 100 and 500.

SERENIUM

Useful in inhibiting the growth of pyogenic organisms. In gonorrhea it reduces the discharge and provides increased comfort.

Serenium* is an orally administered antiseptic dye of high purity and uniformity. It is entirely non-irritating and non-toxic in therapeutic doses. It is synergistic with the usual acidifying drugs used in the therapy of urinary infections and may be advantageously utilized with them. It is available in bottles of 25, 50, and 500 chocolate-coated tablets of 0.1 Gm. each.



TO DETERMINE ACIDITY OF THE URINE USE NITRAZINE

A new, sensitive indicator that is quick and accurate. A few drops of the urine are applied to a Nitrazine strip which is then compared with a color chart. Nitrazine* is available (with color chart) in paper strips, 100 to a vial, 10 vials to a box, and in 0.1 per cent solution in dilute alcohol in 4-oz. and 16-oz. bottles.

*A Squibb Trade-mark.

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MANUFACTURING CHEMISTS TO THE MEDICAL PROFESSION SINCE 1858.

BASIC OPERATIONS IN COMMERCIAL CANNING PROCEDURES

I. CLEANSING OPERATIONS

● As reference to a recent text on canning will disclose (1) the details of commercial canning procedures will vary from product to product. There are, however, certain basic operations which are included in practically all canning procedures. In the belief that they may prove of interest, it is our intention to describe in broad detail the nature and purposes of these essential operations.

One of the first and most important steps in commercial canning is the thorough cleansing of the raw food material received at the cannery. The purpose of such an operation is, of course, immediately evident, namely, to remove soil, dirt or other inedible substances which may be present. However, cleaning also serves to reduce substantially the load of spoilage bacteria with which Nature usually endows raw foods.

Commercially, cleansing is effected in a variety of ways. In general, however, water washers specifically designed for the various types of products are used. In these machines, the raw food material is subjected to high-pressure sprays or strong flowing streams of potable water while passing along a moving belt or while being tumbled by agitating or revolving screens. Sometimes a "flotation" type of washer is also used to remove chaff or similar material. With cer-

tain products, water washing is preceded by a "dry" cleaning treatment in which adhering soil and dirt is mechanically removed from the food by revolving or agitating screens, or by strong air-blasts.

Also, in certain canning procedures, operations whose basic functions are not primarily to clean the raw material may also exert a cleansing effect. Thus, the "blanch" or scalding treatment accorded many products serves to clean the food, as does the water spray sometimes applied to foods after the blanch.

Modern canners know the necessity of thorough cleansing of the raw materials they use. They appreciate that thorough cleaning and removal of extraneous material decreases the load of spoilage organisms which must be destroyed by the heat processes to which all canned foods are subjected. They also appreciate the necessity of maintaining strict plant and equipment sanitation to destroy spoilage bacteria which may be carried in by raw foods.

Because of the efficient cleansing of raw materials and close attention to the other important operations in the commercial canning procedures, modern canned foods must be ranked among the most wholesome foods coming to the American table. (2)

AMERICAN CAN COMPANY

230 Park Avenue, New York, N. Y.

(1) 1937 Appertizing or The Art of Canning, A. W. Bitting,
The Trade Pressroom, San Francisco. (2) Preventive Medicine and Hygiene,
M. J. Rosenau,
Appleton-Century Co., New York.

This is the thirty-third in a series of monthly articles, which will summarize, for your convenience, the conclusions about canned foods which authorities in nutritional research have reached. We want to make this series valuable to you, and so we ask your help. Will you tell us on a post card addressed to the American Can Company, New York, N. Y., what phases of canned foods knowledge are of greatest interest to you? Your suggestions will determine the subject matter of future articles.



The Seal of Acceptance denotes that the statements in this advertisement are acceptable to the Council on Foods of the American Medical Association.

The New

RESTORATIVE

TREATMENT IN LEUKORRHEA

An entirely new concept of vaginitis management has been brought about with the introduction of the research development

SEARLE
Floraquin

Now, it is possible not only to obtain quick relief but actually to

bring about *correction* of the condition, by reestablishing a normal state of the vaginal mucosa.

Floraquin acts by

1. Destroying pathogenic organisms, especially *Trichomonas Vaginalis*
2. Furnishing glycogen to the vaginal mucosa
3. Supplying the proper acidity for growth of Doderlein bacilli

Each Floraquin tablet contains $1\frac{1}{2}$ grs. of Diodoquin (5-7-diiodo-8-hydroxyquinoline) together with lactose and specially prepared anhydrous dextrose, adjusted by acidulation with boric acid to a hydrogen ion concentration which maintains a normal pH of 4.0 when mixed with the vaginal secretion.



Inserting Floraquin Tablets in posterior and anterior fornix.



Floraquin Tablet dissolving and spreading an adherent film throughout vagina.

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MAPHARSEN is easily and quickly prepared for injection. Single doses can be dissolved in syringe and ampoule, without necessitating the use of sterile beakers or other apparatus.

In contrast to the arsphenamines, Mapharsen solutions do not become more toxic on standing; agitation or exposure to air does not increase their toxicity. Haste in completing injections immediately after preparation of solutions is unnecessary.

With the patient either in a sitting or recumbent position, injection can be made according to the usual intravenous technic. Mapharsen solutions should be injected *rapidly*—at the rate of 10 cc. (the entire dose) within 30 seconds after the needle is in place.

Mapharsen treatment is conveniently administered. The ease and rapidity of injection minimize discomfort and encourage patient cooperation.

Mapharsen (meta-amino-para-hydroxy-phenylarsine oxide hydrochloride) is available in single dose ampoules containing 0.04 and 0.06 Gm., each in individual packages with or without distilled water. It is also supplied in ten dose ampoules, containing 0.4 and 0.6 Gm., for use by hospitals and clinics

P A R K E, D A V I S & C O M P A N Y

THE WORLD'S LARGEST MAKERS OF PHARMACEUTICAL AND BIOLOGICAL PRODUCTS



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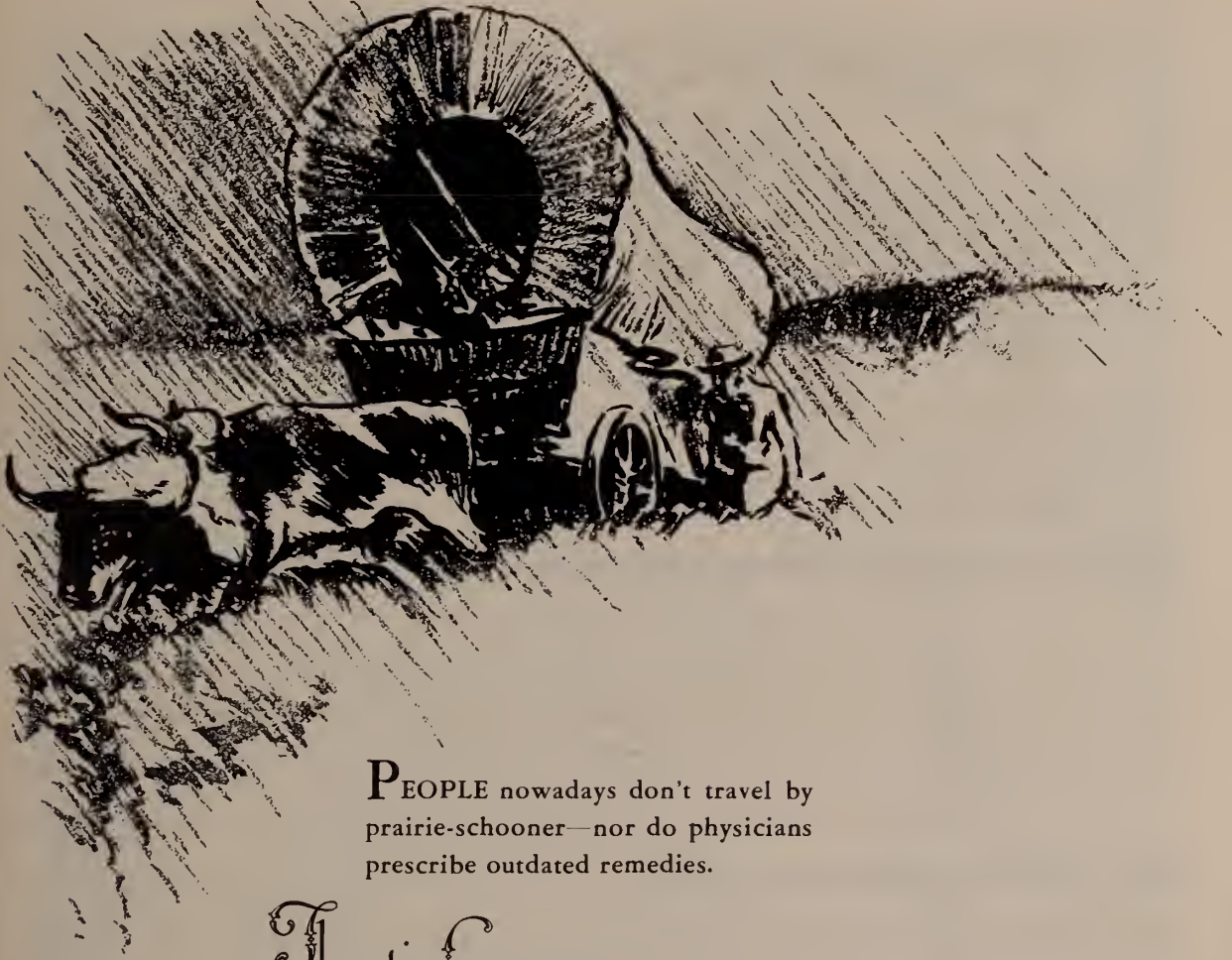
Therapeutic effectiveness, safety, absence of accessory or systemic effect, convenience—these are the four points that distinguish ANUSOL SUPPOSITORIES.

Relief of pain and discomfort is attained by decongestion, not by narcotic, analgesic or anesthetic drugs. Anusol Suppositories are protective and soothing, because the ingredients are incorporated in an emollient base. No belladonna, no epinephrin, no ephedrin—nothing that may cause systemic reaction, is contained in Anusol Suppositories. And they are so shaped that introduction could not possibly cause trauma. Every consideration, indeed, suggests the use of Anusol Suppositories for the medical treatment of hemorrhoids. It is therapy that has conclusively proved its value.

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PEOPLE nowadays don't travel by prairie-schooner—nor do physicians prescribe outdated remedies.

Thantis Lozenges

H. W. & D.

were developed to provide an effective scientific treatment for common throat affections during the "Cold Season". They combine antiseptic and local anesthetic effects—relieve soreness and irritation. • Thantis Lozenges dissolve slowly, reach irritated areas more effectively than gargles, permit prolonged treatment, are convenient in use. • Thantis Lozenges contain Merodicein, H. W. & D., $\frac{1}{8}$ grain, Saligenin, H. W. & D., 1 grain. Complete literature and sample on request.



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ONE OF A SERIES OF CORRESPONDENCE EXCHANGES WITH PHYSICIANS ABOUT KNOX GELATINE.

QUERY about the Allergic Manifestation of KNOX GELATINE

A doctor writes, "Would you kindly tell me from what sources the materials used in making Knox Gelatine are obtained? I am especially interested in whether or not it is all beef, all pork, all sheep, or a mixture of proteins from different animals; also is the manufacture constant as to the ingredients used? This is very important to me as I want to use it for special diets in allergic cases, and for this purpose the exact sources of a food must be known and unvaried."

Knox Gelatine Laboratory REPLY

Knox Gelatine is scientifically prepared from carefully selected long, hard, shank *beef bones only*. Twenty-one control and laboratory tests are made throughout the process of its manufacture. As far as we know, no case of allergy has ever been traced to the use of Knox Gelatine. Contrariwise, there is reason to believe that when Knox Gelatine is added to milk, patients sensitive to milk will show no allergic response.

Sample and useful Dietary Booklets
on Request Write Dept. 483

A good example of a CONCENTRATED Knox
Gelatine Recipe:

THE KNOX MILK STIR

Place the contents of 4 envelopes of Knox Gelatine in an ordinary drinking glass. Add 4 ounces of cold milk and allow to soak for five minutes. Add 2 more ounces of milk and stir until thoroughly soaked. Then place glass in small cooking kettle of hot water until gelatine milk mixture is thoroughly dissolved. Add 2 more ounces of cold milk, which will bring the temperature to a satisfactory warm drink of about body heat. A tablespoonful of prune juice or a few drops of any bland flavor like vanilla may be added.

Total: 8 oz. liquid — about 250 calories

Why you should insist on Knox Sparkling Gelatine

Because Knox Gelatine is 85% protein in an easily digestible form—because it contains absolutely no sugar or other substances to cause gas or fermentation, Knox Gelatine should not be confused with factory-flavored, sugar-laden dessert powders. Knox is 100% pure U.S.P. gelatine. Knox Gelatine has been successfully used in the dietary of convalescents, anorexic, tubercular, diabetic, colitic, and aged patients.



KNOX SPARKLING GELATINE
IS PURE GELATINE—NO SUGAR

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CAL-C-TOSE 'ROCHE' FORMERLY KNOWN AS CAL-C-MALT

The little girl naturally admires the external evidence of physical prowess in her big brother. Ofttimes the parents, too, look only at the surface. But the doctor always looks deeper, and must think of the need for *maintaining* nutrition, in grown-ups as well as in growing children, and for *restoring* strength and well-being to those who are depleted by illness and overwork. Cal-C-Tose is a tonic food, highly effective in accomplishing these purposes.

Cal-C-Tose derives its tonic food properties not only from its nutritive elements, but from its generous content of vitamin C, in addition to dicalcium phosphate, vitamin B, and beneficial minerals—all incorporated in the finest quality chocolate base.

HOFFMANN-LA ROCHE, INC., NUTLEY, N. J.

CAL-C-TOSE IS RICH IN VITAMIN C

Each dose, 2 teaspoonfuls, contains 50 mg. of pure, synthetic cevitamic acid, 'Roche', equivalent to the fresh juice of two medium size oranges.

Mix CAL-C-TOSE with milk.
It makes a delicious drink.



Send for a professional sample

FRUITS AND ACIDOSIS

Fruits are good but not practical for systemic alkalization. The patient whose condition is complicated by acidosis needs a more prompt effect than diet alone can give. His otherwise restricted food intake cannot be increased by an abundance of fruits and vegetables.

Systemic alkalization is made convenient and practical by ALKA-ZANE. In a palatable effervescent salt it supplies sodium, potassium, calcium and magnesium as citrates, carbonates and phosphates—the most assimilable forms of these salts. They assure quick action—economically. No sulphates, lactates or tartrates to interfere with results; no sodium chloride to lessen the effect. With Alka-Zane the alkali reserve is quickly replenished and satisfactorily maintained at its normal level.

Let us send a trial supply. A request on your letterhead will bring it. Alka-Zane is supplied in bottles of 1½, 4 and 8 ounces.

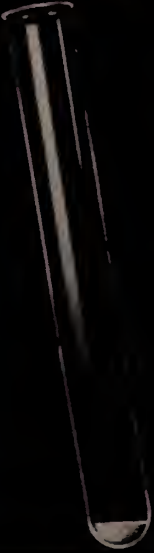
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ALKA
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Why RY-KRISP is a natural corrective for *Common Constipation*

The two test tubes show how Ry-Krisp plus the liquid ordinarily consumed at a meal produces bulk. At left is the amount of moisture in a dry Ry-Krisp wafer, 6.8% by weight. At right the amount of water one Ry-Krisp wafer will absorb, 5 times its own weight.



Doctors are finding Ry-Krisp Whole Rye Wafers a natural aid for correcting common constipation due to insufficient bulk for reasons which are obvious when you consider that...

RY-KRISP is simply whole rye, salt and water—*double baked* for brittle crispness. As such a food it has a high percentage of bran, high pentosan and crude fibre content to encourage normal bowel action. Moreover, each wafer absorbs five times its own weight in water, thus producing need-

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RY-KRISP involves no unpleasant dosage to be avoided or postponed. Instead it offers the tempting, crunchy goodness of a *natural*, delicious food—so good with any meal that patients gladly eat it regularly. Results are dependable, predictable, natural. For that reason alone it is immeasurably valuable to school children, to busy men and women tied down with daily routine.

For free samples and the Research Laboratory Report on Ry-Krisp use the coupon below.



RY-KRISP *Whole Rye Wafers*

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Without obligation, please send me samples of Ry-Krisp and copies of the Research Laboratory Report.

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*Excellent
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**STREPTOCOCCUS
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SOLUTION FOR INJECTION

*Detailed literature sent to physicians
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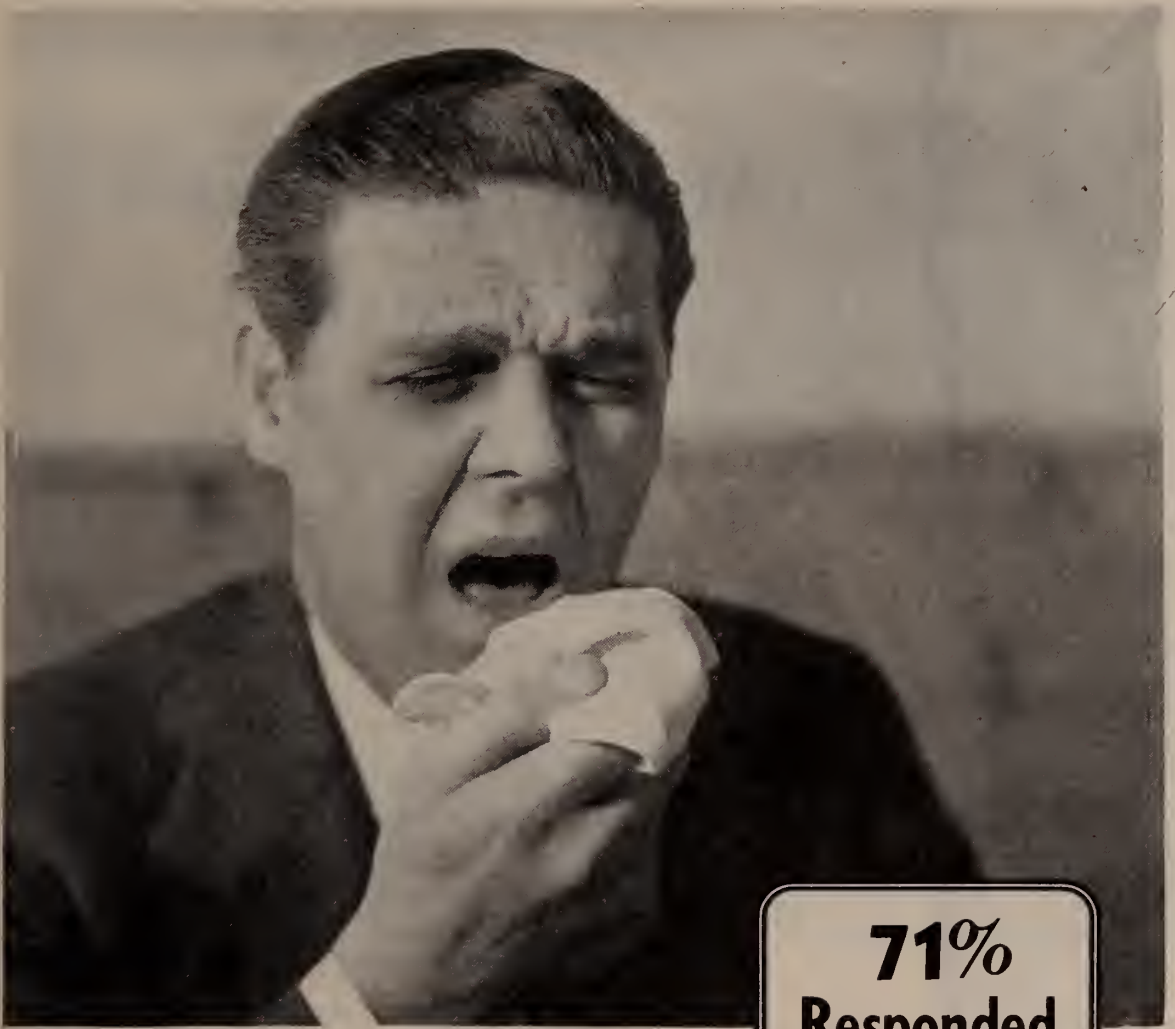
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WINTHROP research laboratories have made important contributions to the scientific investigation and standardization of the new antibacterial specifics. Prontylin, a member of this group, is distinguished by the highest degree of chemical purity. For reasons of safety Prontylin has been marketed only in tablet and powder form; Prontosil only in aqueous solution.

HOW SUPPLIED—Prontosil Sterile Solution (2.5 per cent), ampules of 5 cc., boxes of 5 and 50; ampules of 10 cc., boxes of 5; bottles of 50 cc. with rubber diaphragm stopper. Prontylin tablets of 5 grains and 7½ grains, bottles of 25, 100 and 1000; repurified powder, bottles of 1 oz.





71%
Responded
Favorably to
VITAMIN F
Treatment

"In representative groups treated, vitamin F reduced the average incidence of colds by 64% and the average duration by 78%, there being at the same time little appreciable difference in the incidence or duration of colds in an untreated group; . . . and 71% of a group already suffering from head colds responded favorably to vitamin F treatments."*

*Canadian Medical Association Journal, 37, 38-41, 1937.

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Please send me a copy of your bibliographical abstract on vitamin F, together with an abstract on the use of vitamin F for the common head cold.

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A MAJOR ADVANCEMENT IN CIGARETTES

Patients with irritation of the nose and throat due to smoking were directed to change to Philip Morris. Within a limited number of days not only did the *patients* report definite relief, but medical examination showed every case of irritation had cleared completely or definitely improved.

This Philip Morris superiority* is due to a distinct difference in manufacture. Philip Morris employs diethylene glycol as the hygroscopic agent—proved a major advancement in cigarettes.

**Proc. Soc. Exp. Biol. and Med.*, 1934, 32, 241-245
Laryngoscope, Feb. 1935, Vol. XLV, No. 2, 149-154
N. Y. State Jour. Med., June 1935, Vol. 35, No. 11
Arch. Otolaryngology, Mar. 1936, Vol. 23, No. 3
Laryngoscope, Jan. 1937, Vol. XLVII, No. 1, 58-60

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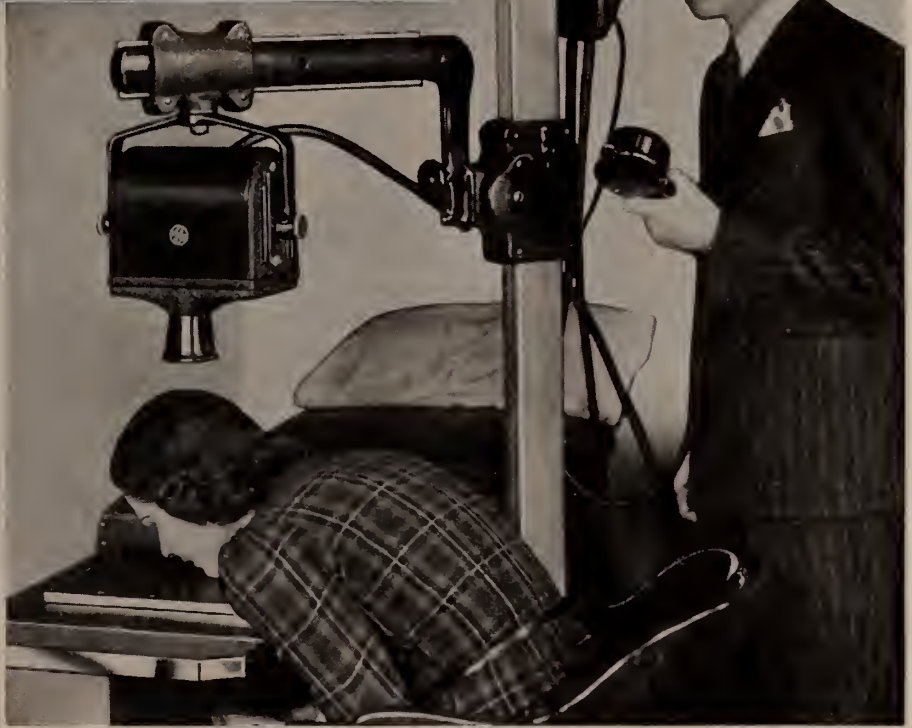
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See for yourself how compact, powerful, flexible, and easy-to-operate the New F-3 really is. Pick it up, carry it, use and operate it in your own office—without cost or obligation. You will get convincing, personal proof—the F-3 will speak for itself.

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When the impulse to defecate is lessened due to improper diet or lack of discipline, the fecal matter usually becomes dehydrated and impacted in the bowel . . . To simplify the problem of constipation, prescribe Petrolagar. It assists in the regulation of bowel movement. Petrolagar mixes intimately with the bulk of

the stool to induce a soft, easily passed mass. By reason of its pleasant taste and mild but thorough action, Petrolagar is agreeable to patients of all ages . . . Five types of Petrolagar provide a choice of laxative medication suitable for the individual patient. Petrolagar Laboratories, Inc. • Chicago, Ill.



Petrolagar — Liquid petrolatum 65 cc. emulsified with 0.4 Gm. agar in a menstruum to make 100 cc.



Petrolagar

MATERNITY SUPPORTS

One author* writes: "A maternity corset not only aids in disguising the pregnancy figure but also is of great value in preventing a number of the complications of pregnancy. It should support the abdominal wall, the spinal column and the pelvic girdle. By supporting the abdominal wall, it holds the growing uterus in place. ... the contour of the abdomen wall will be better preserved... With the back supported, the change in posture due to the forward displacement of the uterus is less fatiguing and many backaches are eliminated. Similarly, support of the pelvic girdle prevents sacroiliac strain with its accompanying pain and backache."

. . .

The sections of Camp prenatal supports are brought firmly about the pelvis by means of the over-strap with its buckle and lacing device. When the pelvis (the base of the body) is thus perfectly fitted, the upright sections of the support will function without undue pressure upon the abdomen or back.



The support shown is designed for all types of build: thin, intermediate and stocky.

*BECK, page 98, "Obstetrical Practice," published by the Williams and Wilkins Co., 1935.

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Offices in: New York, Chicago, Windsor, Ont., London, England • World's largest manufacturers of surgical supports





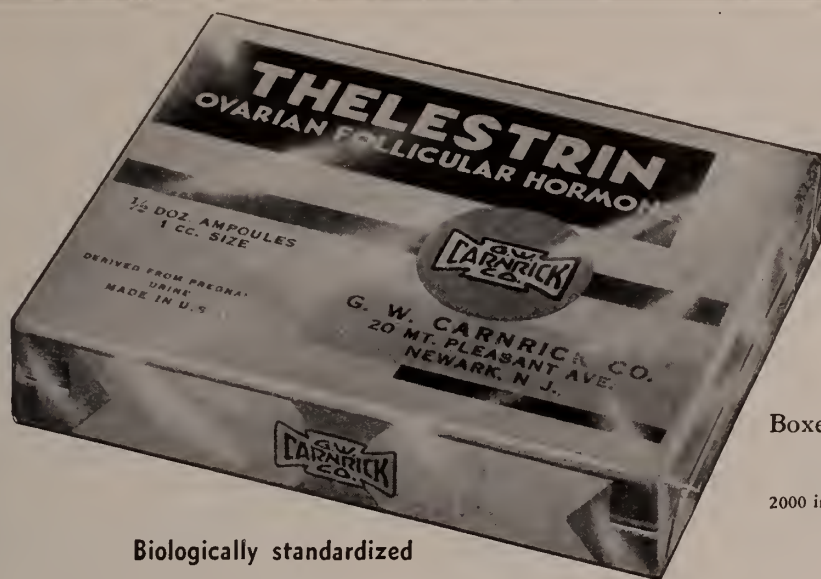
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Recovery from hypochromic anemia, in cases treated with Hematinic Plastules, is usually rapid and unrestrained as evidenced by the early increase in the hemoglobin of the red blood cells. The suggested daily dose of only three Hematinic Plastules Plain replaces massive iron feedings and diminishes the likelihood of gastric disturbances, constipation and diarrhea . . . Hematinic Plastules provide ferrous iron and vitamins B and G in soluble gelatin capsules, available in two types, Plain and with Liver Extract. Inquiries from physicians are given prompt attention.



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Boxes of 6 Ampoules

2000 international units in oil.

Biologically standardized

The remarkable constancy of action of ovarian follicular hormone in experimental work has led to widespread use in therapy. In a number of conditions it has proved to be unusually successful. In relieving the symptoms of the menopause and some types of amenorrhea and dysmenorrhea it has real value.

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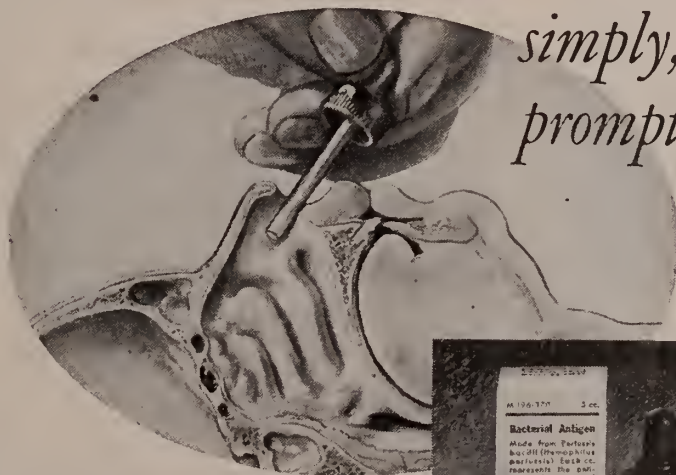
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Control the paroxysmal cough of PERTUSSIS—

CLINICAL USE of Pertussis Topagen Mulford provides ample evidence of the value of this unique therapeutic agent in the symptomatic control of whooping cough. Merely by its intranasal instillation definite cessation or amelioration of the paroxysmal cough soon follows.

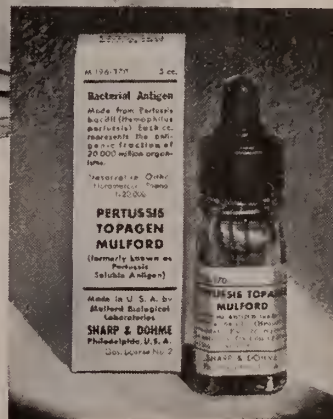
The favorable results attending the use of Pertussis Topagen Mulford, as reported by independent investigators, is remarkably parallel. Schooten reports improvement in 90 per cent of cases treated (50 per cent marked improvement and 40 per cent definite improvement). Gold reports that, in 85.7 per cent of cases treated, very satisfactory control of the severe paroxysms of cough resulted. Slesinger reports 75 per cent improvement (45.8 per cent marked and 29.2 per cent moderate improvement).

Pertussis Topagen Mulford is a sterile solution of the soluble antigenic substances derived from recently isolated Phase I cultures of *H. pertussis*. Each cc. represents the



*simply,
promptly*

antigenic substances derived from 20,000 million organisms. Supplied in a 5-cc. vial fitted with pipette-bulb stopper, available at all distributors of Mulford Biologicals.



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MULFORD BIOLOGICAL LABORATORIES

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THE CRUCIAL TEST—Laboratory tests are not always decisive. Clinical trial is essential really to prove the merit of new drugs. The Lilly trade-mark on pharmaceuticals and biologicals is assurance of conscientious testing both in the clinic and in the laboratory.



'Lextron' (Liver-Stomach Concentrate with Iron and Vitamin B Complex, Lilly) is effective in all anemias which can be successfully treated with liver extract, or with iron. The factors necessary for erythrocyte formation and hemoglobin regeneration are liberally supplied by this preparation. 'Lextron' is packaged in bottles of 84 and 500 pulvules (filled capsules).

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ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF
THE ILLINOIS STATE MEDICAL SOCIETY

VOL. 73

OAK PARK, ILL., MARCH, 1938

No. 3

ILLINOIS MEDICAL JOURNAL

Published monthly by the Illinois State Medical Society under the direction of the Publication Committee of the Council.

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Membership correspondence to Dr. Harold M. Camp, Monmouth, Ill.

Society proceedings and news items and changes in the mailing list to Dr. Henry G. Ohls, Managing Editor, 1618 Juneway Terrace, Chicago.

Subscription price of this JOURNAL to persons not members of the Illinois State Medical Society is \$3.00 per year, in advance, postage prepaid, for the United States, Cuba, Porto Rico, Philippine Islands, Hawaiian Islands and Mexico. \$4.00 per year for all foreign countries included in the postal union. Canada, \$5.50. Single current copies, 50 cents.

Editorials

IS THE STAIN OF BUREAUCRACY THE BEGINNING OF THE END? A NATION WAITS TO SURVIVE OR PERISH UPON THE VERDICT

Medicine, after having worn the thickest of blindfolds since time within memory, suddenly dropped her veil, and stepped forth into the full light of day.

That this sudden exposure left the Mother Science unprotected from sting of insects and blasts of chilling winds is not surprising. That she should find herself much beset affords even less cause for wonderment. The encroaching, pillaging hand of bureaucracy forced medicine to drop the veil so long prescribed by tenets of ethics. But the brand of that defiling hand remains upon her brow in the stain of compulsory health insurance, or state controlled medicine.

Is that stain the beginning of the end? Is it malignant of cell? Or a mere transitory ecchymosis? That is what the medical profession is trying to find out, and to remedy.

The progress of this investigation is analogous to all research. Unfortunately this is not a situation where the methods of earlier medicine—"trial and error"—can be applied with safety. A nation waits to live or fall upon the verdict. Unfortunately the public at large is prone to forget the ancient adage of "Caveat Emptor" in the passion for adventuring in new theories and in the purchasing of high sounding titles. "State Medicine," "Compulsory Health Insurance," "Federal Aid" and "Government Subsidy" are as high sounding panaceas as the "Dr. Sanden's Electric Belts," the So-and-so's Pectorals, or the Rich and Ready Consumption Cures and the various Sarsaparilla messes that forty years ago shouted their virtues to the world from little red barns all over the United States. The American Medical Association by persistent effort has managed to legislate the most flagrant of those offenders into a well deserved but even now, only comparative obscurity. But the American Medi-

cal Association has on its hands a bigger legislative problem than that of the patent nostrum of our fathers and grandfathers. The most nauseating, the most fraudulent, the most despicable quack-salve ever rubbed into the eyes of human beings is the "inglorious alchemy" of state controlled medicine. No quack doctor of Elizabethan times ever had a crew of better trained mountebanks to draw trade than has the crew of bureaucratic employes with communism in their hearts, and, in their pockets literally the heart's blood of the small taxpayer the nation over, enriched by the most crippling imposts that American trade has ever been compelled to shoulder. This is what comes to pass when the nation that has been proven to have a greater thirst for patent nostrums than almost any other nation in the world, gets peddled the greatest nostrum ever patented by the greatest crowd of economic quacks that ever sullied a public portfolio. Some of the endeavors of this gang of rogues call to mind the famous old advertisement some 250 years ago of the London charlatan who advertised

"The Asian Balm; the American Balsam and Essence by the use of which the Americans are generally strangers to the gout; the Japan powder which expels all manner of worms. The Chinese antidote for rheumatism; The Empirical Pill for the Ague; The Grecian and Turkish Antidote which prevents Fainting. The Arabian Antidote that prevents and cures the Ptisick and Consumption. The Balm of Gilead for internal pains."

Also in those days a widely sold nostrum was called the "Herculean Antidote or the German Gold Elixir," said to cure scurvy, stoppages and obstructions." American business has felt that it needs such an Herculean Antidote but any such golden elixir of which our nation has seen any traces in the last ten years seems to have been applied to the palms of every agency out to destroy Americanism, and most especially to that changeling in the name of public welfare set on the American doorstep under the name of State Medicine. The ultimate arrogance of the charlatans, the squalling of the changeling caused the sacrificial priestess of all humanity, ethical medicine, to drop her veil of silence, of modesty of gentle working with self-effacement, and to step forth and to reveal the extent of gratuitous medical service, and the depths of medical

charity by medical men, and the progress and the constructive nature of medicine when controlled by science and not by politicians.

But the nostrum habit lies too strong upon our country. Politics is out selling a panacea that will "cure-all" and "everybody" at the rate of \$1,000,000,000 in taxes and if that billion doesn't work, why send on another \$1,000,000,000 to get six will-o'-the-wisp schemes for the price of five, give medicine the boot and watch the works! And how the country is falling, falling for it! Even some of the best of our medicos. "Medicine is willing to talk," the word went out, "willing to talk," and to tell after all these centuries of silence. So columns of lay journals, speaker's rostrums, and the airways and the microphone all opened up. Let medicine talk and tell. Ethical medicine got on the job and SO DID SOME SUBSIDIZED MEDICAL MEN WHO ARE ETHICAL WHEN THEY ARE IN THE LIMELIGHT AND ALL FOR MEDICINE; AND WHEN THEY ARE IN THE SHADOW THEY ARE ALL FOR SELF AND TEMPORARY POLITICAL POWER, AND SO HAUL A FEW OF THOSE OPINIONS OUT INTO THE LIMELIGHT WITH A LONG TAIL BEHIND THEM. That is the pity of it! The Public, which is swayed far more by emotion than by logic, doesn't know what to accept and what to reject. As a result medicine stands unveiled and stung and whipped by every enemy in the communistic camp. According to these theorists, medicine is all wrong. Why? Because she does not want to come under state control. Experience with government controlled railroads during the world war just about wrecked the railroads of the country. The return to *efficiency*, let alone to prosperity for the railroads, has not yet been fully accomplished. The war was over two decades ago but the railroads are still suffering from war trouble. Yet here is a profession, as much of a public utility as the railroads were which the communists of the land, and the bureaucratic government saddled now upon us, wishes to place under state control and lay domination, and this experiment is to be had at the expense of human life. The government couldn't straighten out the railroads. The government couldn't run them without waste and inefficiency. The government couldn't run the air-mail routes. After an unprecedented

rate of slaughter of young men the government turned the flying of the mails back to the business men who had put the air-mail on its feet. There is not a single recorded instance of governmental economy and efficiency in the manipulation of any economic or scientific unit of national life. Yet politicians and the ever increasing army of political employes who live by grace of political favor are going to have state controlled medicine or die in the attempt. With them the slogan is "Kill the Golden Goose or bust." So the airways, the womens' clubs, the speakers' rostrums, organization platforms and every other spot from which the public ear, the public heart, the public mind, the public eye, or the public pocketbook, or the public purse can be stirred, is glutted with the medical theorists. All this in the face of the fact that it is doubtful if there is a hamlet, a county, a town, or a city of any size in the United States today where now and for years past there is not being distributed more free medical treatment, than there is free anything else, (unless it is religion), and certainly times upon times more free medical care than there is distribution of free coal, free shoes, free rent, free clothes and free food. Even where commercial commodities are distributed there isn't a chance in the world that these recipients are even fifty per cent as *unworthy* of receiving such benefaction as the average man who accepts medical charity and medical care and who is granted it cheerfully by medical men.

The druggist and the hospital get a better chance at life than the doctor. Yet it is the doctor and all his works that are going to be chewed up by the communists, or one and all they will know the reason why, since bureaucracy in Washington seems determined to down with the doctors and call it a day. About six weeks ago one of the big broadcasting systems of the country opened its service to a doctor who had come over from England to see about the filming of a novel he had written. This gentleman admitted that he had only been *six weeks* in America, yet he filled the public ear with a lot of bunk about the advantages of so-called group practice as it is worked out in England. The English workingman has never had the advantages of American standards of life, from beefsteaks to bathtubs and certainly not in medical practice. Yet this visiting Briton had the

audacity to disregard the old Arab law of bread and salt, and to knife his American brethren in the back by painting a beautiful picture about what group practice could do for a man. He said in one instance:

"A patient coming to such a group is placed immediately in the hands of an expert specially qualified to deal with his particular case."

As if America didn't do it better in every way, as the highest of British medical authorities admit! Further this doctor claims that group practice would rid the general practitioner of a "dog's life" and "give the patient a better deal as well." Then he turned on the works and went out in his sympathies for the "white collar class" who, after six weeks in America this visiting Englishman declares, do not have good medical service though "the very rich and the very poor do." It is true that later in his speech this doctor made some half-way temporizing remarks. But in the face of what had gone before they were not of the weight of a picayune.

It would be wonderful to note what the effect would be if department stores, food stores and landlords were besought to be permitted to tax themselves into destitution so that the government could control their shops. More men and women suffer from hunger than from lack of medical care. Starvation and exposure cause more ills in a week than a thousand doctors can cure in a month. It is apropos to quote that Illinois physician, who after having listened to our British brother over the microphone wrote to the editor and said:

"Give our people a chance to work, and lessen the cost of government and our profession will care for the sick and our patients will take care of their doctors. Let the government give what the administration cost of Federal controlled medicine would be to those who are sick and that would pay the physician and save the government the cost of medical service."

But it wouldn't of course,—and that is the hitch with the bureaucrats,—pay salaries of any political henchmen who would have fat jobs by entering into the practice of medicine by virtue of political favor rather than by scientific attainment, as will happen when medicine comes under lay control of the ward heeler. Believe it or not, of such is the kingdom of state controlled medicine.

HEREDITY AND EUGENICS

Heredity and eugenics is one of the current and persistent points of social and scientific consideration. Finesse in race selection is recommended for race supremacy.

In a discussion of the results of mating between superior, inferior and mediocre individuals Doctor Davenport shows various poignant premises. Among these are statements that:

"With exceptional parents some of the offspring will be exceptional individuals but also that, whatever the parentage, many individuals will be inferior in respect to many or even all essential characters, and these are known as degenerates.

"Animal breeding has two distinctly different objects, arrived at by almost opposite methods: 1. the promotion of a few exceptional individuals, like race horses and fancy stock generally; 2. the raising of the general average of the breed. In the first case, only exceptional individuals are used for breeding purposes. Some would imitate this procedure with humans, but Davenport holds that we secure the same results in a good degree through preferential mating. It is not true, as a rule, that people choose opposites. On the contrary, tall tends to marry tall, and short, short; musical, musical, and in like sequences.

"To go beyond this natural result of preferential mating, we should be obliged to apply to our marriage laws of the best people, such restrictions as would dangerously interfere with the deepest human instincts, in which attempts we should either fail, or else we should blot out of the race its choicest asset and most valuable character—love. The raising of the average may be attained by breeding from the few or by excluding the lower limits of the race. We can not exclude as widely as the animal breeder does, but we can aim at the absolute exclusion of the degenerate. Davenport sums up by saying that he can not approve the oft-proposed interference with the marriage relations of normal people. Any mistakes they make will be blotted out mechanically and will not permanently weaken the race, or greatly hamper it at any given moment. But he would deal differently with the criminal class and take every opportunity to eliminate them from the possibility of reproducing their kind when they are once adjudged to be degenerates.

THE SYPHILIS CRUSADE

A flood of anti-syphilis propaganda sweeps over us from the Pacific to the Atlantic Ocean. Ay, it is even ravaging Europe to the extent that in some sections of France serious consideration has even been given to "putting the prostitutes out of business."

Toll the bells for "La Vie de Boheme"! The millenium of course will be here when the most wretched as well as the oldest of all professions shall be as obsolete as the dinosaur. Unfortunately most men of medicine feel that such a day will come only when human nature shall have reversed itself and the ideal rules a realistic world. Locally speaking the attempt in Chicago to debar prostitution by closing the infamous "red-light" district simply delocalized the custom and spread it throughout the city. The trade was scattered, not scotched.

And this is one of the fundamentals that must be considered in any attempt to eradicate the "black plague." There is no doubt but that one courtesan can disease an entire army. There is great doubt that the Russian system of "Prophylactoria" is as efficacious as appears on the surface or by soviet statistics peddled joyously throughout the world. Like Johnny and the wood-box the months before Christmas, it "looks too good." The Italian system of "keeping 'em as clean as we can" appears to have more substantial merit on the face of things.

No one dare minimize the need for the anti-syphilis crusade that is reaching almost as far and wide as a luetic infection itself. Eradication of syphilis signifies the emancipation of the world from fully fifty per cent, at least of all its physical woes.

The fly in the ointment would seem to be that while thinking Americans are taking this crusade with the seriousness which it merits and the earnestness which it needs, there is more than one sign upon the horizon, that unless specific vigilance is exerted that the charlatan and the quack will find in this most humane endeavor a happy hunting ground for his familiar and nefarious practices.

Medical men, working through their local organizations should see to it that the public is protected from such criminal depredation as the fake venereal disease doctor is eager and willing to perpetrate. There is no victim more gullible than the man with syphilis or the man who is

lead to believe that he is so afflicted when actually he is not.

Having launched this physiological test, having stirred up the general public to a realization of the danger besetting mankind from the "black plague" it is yet another task laid upon the shoulders of the medical profession to protect humanity from its own ignorance.

THE 1938 ANNUAL MEETING

The 1938 Annual Meeting of the Illinois State Medical Society will be held in Springfield on May 17, 18, 19; and everyone responsible for any portion of the program or for any of the arrangements, is working diligently to make this a most successful annual meeting.

The scientific meetings, general sessions, technical and scientific exhibits will all be housed under one roof, the Knights of Columbus Building where recent meetings in Springfield have been held, and where we always find ample accommodations. The Abraham Lincoln Hotel is the official hostelry for the meeting, and the President's Dinner on Wednesday evening will be held there.

In addition to the usual features of the annual meeting, there will be a new type of exhibit developed for the 1938 annual meeting to be known as the "Hall of Health." Many cooperating organizations will join with the Illinois State Medical Society in developing outstanding health exhibits for the public, and they will be displayed at the Elk's Club, and will be open to the public throughout the week from Monday, May 16th to Saturday evening, May 21st.

The Committee on Exhibits has been working for months arranging these interesting health exhibits, and much publicity will be given concerning them through the press, by radio and through the mails so everyone within a reasonable distance of Springfield will know that they are cordially invited to see these wonderful displays and see what the various professional groups are doing for the protection of the public against disease.

The preliminary program for the meeting will be published in the April ILLINOIS MEDICAL JOURNAL, and the official program will appear in the May issue.

It is hoped that members of the Society in every county of Illinois will plan now to attend the 1938 Annual Meeting.

THE FIFTY YEAR CLUB

At the meeting of the Council last January, arrangements were completed for the formation of the "Fifty Year Club." Every member of the Illinois State Medical Society who has completed fifty years of practice, and those physicians who have completed fifty years of service and who are not now members, may be admitted upon the recommendation of the county medical society of the county where they reside.

Letters were sent to every county medical society asking that a list of those physicians who have practiced fifty years be sent to the Secretary of the State Medical Society as early as possible. Complete details relative to the Club, requirements for admission of candidates, and other details were sent to those county society secretaries.

Members were being received by the middle of January, and on February 24th, a total of 110 names of physicians who have finished fifty years of practice had been submitted—these from the downstate counties. It was planned by the special fifty year club committee, to have the Councilor present at special meetings arranged to honor these men, and present the Certificate of Membership and membership emblem when possible.

At this time 92 presentations have been made, and 18 are being planned for the next month. Some very interesting information concerning many of these fifty year men has been received. The oldest practitioner in years of service which has been reported to this time is Dr. O. L. Pelton of Elgin, who began his practice in 1872. Dr. E. D. Wing of Galesburg, who has been health officer of that city for many years, is 91 years of age, and graduated in medicine in 1873. Dr. J. M. McClanahan of Kirkwood graduated in 1874 and is still in practice in a rural community.

The Fifty Year Club Committee, consisting of Dr. Andy Hall, chairman, Dr. J. S. Templeton and Dr. T. B. Knox, is anxious to get information relative to the highlights in practices of the members of the Fifty Year Club, and they respectfully request that all members, who have not already done so, write to the Secretary of the Illinois State Medical Society, giving this information for the permanent records to be maintained in the Secretary's office. Dr. J. R. Ebersole, a member of the Club, has been Medical

Director of a Life Insurance Company for 41 years and he is undoubtedly one of the oldest medical directors in the country, in years of service. Dr. J. C. Westervelt, who is on his 61st year of practice, is health officer at Shelbyville.

Information already received relative to many of these men is most interesting, and add materially to the history of medicine in Illinois from fifty to sixty-six years ago. One physician in Southern Illinois has had a rather extensive "boat practice," as he has made many calls through the back waters of some of the swollen streams of that area.

In the near future, the special committee proposes to have a questionnaire form sent to all members to get more information relative to the hardships they have endured, especially in their early years of practice, this information to be kept in a permanent file, should be of much information in the future and as time goes on, will be of much value to future generations.

If there are any physicians in Illinois who have completed fifty years of practice who may have been overlooked by the county society secretary, please communicate with the Secretary, Dr. Harold M. Camp, Monmouth, as early as possible so that the list may be completed.

At this time, the list of Fifty Year physicians from Cook County has not been completed, but it is hoped that the membership of the club will be completed for the year before the annual meeting next May.

TOTALITARIAN SET-UP FOR PHYSICIANS

In the Voice of the People, *Chicago Tribune*, there not long ago appeared an editorial from the *Sun*, Baltimore, under the heading "Totalitarian M. D.'S" which we quote as follows:

It would perhaps be extreme to ask Mr. Roosevelt to assume responsibility for remarks by Jim Ham Lewis, but the Illinois senator's address to the delegates of the American Medical Association at Atlantic City, June, 1937, presented, whether ironically or objectively, is not clear, a lucid sketch of the place which the doctor may expect to take in society if planners are permitted to continue unhampered.

In his address Senator Lewis explained that, under the new dispensation the government would know no "patients" but only citizens. "We

recognize an instrument called a citizen," said the senator, "who is essential to the welfare of government. . . . You have professed to be able to help him carry on his life. We need his life for usefulness in civic affairs, for the conduct of affairs of life in its civil nature, in military for the defense of the country." To keep this valuable "instrument" in good health, the government must treat the doctor as an officer of the state, compelling his services as needed. Such, the senator insisted, is the "position in which you are soon going to be put and which every hour you reach nearer and nearer."

It is no wonder that Senator Lewis' remarks are said to have "disturbed" his audience. Jim Ham admitted he didn't think much of it either, but he was sure it was coming. Contact with the ambitions of the New Deal creates strange and horrible mirages, but one would be too sanguine, in view of the extraordinary "extension of the social frontiers" already taken for granted, to assume that even such Gleichshaltung as sketched for the doctors by Jim Ham Lewis is utterly fantastic. From such a prospect not merely the doctors, but the citizens might well return in revulsion for a government which recognizes no human relations such as that between doctor and patient but only the stern relation between the state and its citizens (as cannon fodder, servants in civil affairs, etc.) is certain to become more of a menace to human happiness and welfare than their precursor.

If Jim Ham has been flying a trial balloon before the collective medical mind, it is one which ought to meet with an immediate barrage of attacks, for the most reactionary and obscurantist attitude attributed to medical groups presents no threat to social happiness and the development of the healing art as this theory that, even as a scientist and a physician, a man must be an "officer of the state."

MALICIOUS PROPAGANDA

It is perfectly obvious that during the Atlantic City meeting of the A.M.A. as well as during the intervening months there has been an attempt on the part of certain groups and certain newspapers and other publications to sell the public into believing that the American Medical Association does not really represent the true feeling of the rank and file of the profession in regard

to questions of State control of medicine and similar socialistic problems. These payroll groups and all time political employees as well as the publications mentioned apparently are attempting to drive a wedge between the official staff of the association and its membership, totaling 106,000. A recent incident illustrating and confirming this tendency is the statement that appeared in "Time" magazine for June, 1937, in regard to the recent two-volume survey of the American Foundation called American Medicine—expert testimony out-of-court.

TRYPARSAMIDE THERAPY OF NEUROSYPHILIS AND ATROPHY OF THE OPTIC NERVE

Of the entire group of 155 patients, Leo L. Mayer, Chicago (*Journal A. M. A.*, Nov. 27, 1937), observed fifty-four from an ocular point of view for at least five years and a few as long as ten years. In only two eyes, or 1 per cent, did blindness ensue, while four eyes lost visual field to a degree. It is not his purpose to argue whether these impairments were due to tryparsamide, to the neurosyphilis or to both. However, it must be admitted that the patients were poor risks for any kind of treatment. In view of the fact that visual acuity and visual fields were decidedly improved in so many instances, it would seem fair to state that tryparsamide under proper control is less dangerous than at first considered, even if optic atrophy has already become apparent. Moore's statement that "tryparsamide is absolutely contraindicated in the treatment of the syphilitic optic atrophies," Stokes' contention that tryparsamide is contraindicated "when disease of the optic nerve is present (not the vascular mechanism)" and the statement of Bluemel and Greig that tryparsamide is "a form of therapeutic dynamite, notable chiefly for its dangers," do not agree with the author's experience. On the other hand, many reports agree with his results, indicating that "the percentage of danger from tryparsamide is no greater than that from some other preparations, providing the proper precautions are used," and that "the proved therapeutic value of tryparsamide, in a disease which is 'a medical emergency' justifies the slight risk." It is evident that a certain small number of patients with syphilis of the central nervous system have involvement of the optic tracts which may lead to blindness even without specific treatment and that an even smaller number of such patients when given tryparsamide may have subjective or objective signs and symptoms of injury to the optic tracts. Whether this minimal degree of danger is due to a direct toxic effect of the drug on the retina or optic nerves, to a particular sensitivity of the patient to the drug, to the toxic effects of the disease on the optic nerve, to arterial spasm caused by the drug or the disease or to the noxious influence of the treatment for syphilis during a period of low blood pres-

sure, as hypothesized by Lauber, the low incidence of damage fully justifies the use of tryparsamide with proper observation.

THE ARAB AND THE CAMEL

An Arab lay asleep in his tent. He was awakened at midnight by his camel.

"What do you want?" asked the Arab, as the camel pushed his nose into the tent.

"It is cold out here," answered the camel. "May I stand with my head inside the tent?"

"O yes," answered the careless Arab. And he turned over and went to sleep.

Soon he heard the camel moving.

"What do you want?" asked the Arab.

"It is cold out here," answered the camel. "May I stand with my shoulders inside the tent?"

"O yes," answered the Arab. And he rolled over and went to sleep.

Soon he heard the camel moving again.

"What do you want?" asked the Arab.

"It is cold out here," answered the camel. "May I put my fore legs inside the tent?"

"O yes," answered the Arab. Then he moved along to make room for the camel. Then he rolled himself up and went to sleep.

By and by he heard the camel moving again.

"What do you want?" asked the Arab.

"It is cold out here," answered the camel. "May I bring my hind legs inside the tent?"

"O yes," answered the Arab. "They cannot take much more room after all."

So in stepped the camel.

"It is very crowded in here," said the camel at last, "I think you may as well move out now and let me have the whole tent."

So he pushed and pushed; until at last the Arab rolled out under the tent into the cold, and the camel lay down to sleep.

—Aesop.

THEELIN THERAPY IN PSYCHOSES: EFFECT IN INVOLUTIONAL MELANCHOLIA AND AS AN ADJUVANT IN OTHER MENTAL DISORDERS

For all practical purposes theelin seems to be specific in involutional melancholia, the apparent recovery rate being 92 per cent in the series treated by C. C. Ault, Emmett F. Hctor, Farmington, Mo., and August A. Werner, St. Louis (*Journal A. M. A.*, Nov. 27, 1937). Massive doses of from 30,000 to 40,000 international units for the first month of treatment accelerate the recovery rate in involutional melancholia, the hospitalization being reduced to an average period of three months. Theelin is indicated for any woman during the climacteric having disturbing mental aberrations, whether mild or severe. Theelin therapy is efficacious in relieving distressing symptoms of the climacteric in other types of psychoses, many patients being improved to the extent of recovery.

MEDICAL ECONOMICS

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Writing an occasional article for a column such as this is not a difficult task, provided the author selects a subject in which he is particularly interested and has some new material or takes one side of a controversial one. However, to write an article every month and avoid repetition, is difficult. Even more difficult is the tendency to write only on one subject, and in this case that subject would have a distinct tendency to be State Medicine.

It is only by reading a large amount of the current literature, as well as attending medical meetings, that one can get enough material to sift out some of the pertinent facts for presentation monthly. Many times the attempt is started with definite misgivings as to the value of any article that can be written at that time. Sometimes the premonition is correct and the attempt must be given up, while at other times, ideas flow freely and the writing is accomplished in short order. The kind expressions of appreciations by members of the society have been most encouraging and the writer is inclined to believe that the Column is being read by an increasing number of members of the Society.

When the FIFTY YEAR CLUB was started the writer was only luke-warm on the subject, but watching the plan work out and the reaction of the medical profession as well as the public to the plan has convinced him that this is one of the finest ideas to be presented in the past few years. Needless to say the recipient of the honor and his family are delighted with the recognition shown by organized medicine for the fifty years of service to the public, but more important still is the reaction of the public. They feel that the medical profession appreciates the work of these men, and have voiced a feeling that they have themselves, but have been too busy in their every day life to voice their appreciation. The presentation of the button recalls to the minds of the older residents, particularly in smaller communities, the many times the "old doctor"

has rendered services of great value to either some member of his family or the community which too often has been forgotten in the daily hubbub of business. The press has been most cooperative in informing the public of the presentation of these honors. It seems an excellent opportunity for the medical profession to stress the importance of these presentations and make the time of the same a day of importance in the community.

Browsing through medical magazines and current literature one finds many references to the medical profession. A short time ago, an article was found tucked away in a corner, which stated that the new plan of medical care for employees of the Home Owners Loan Corporation had been refused a gift of \$40,000 to start the plan. This was done by the Senate and will probably have a salutary effect on the promoters, who will have to look elsewhere for an "angel." Incidentally it shows that there are still present in our legislative halls men who are on the alert and opposed to such radical experiments at the expense of the government and under her wing, even though cleverly tucked away from the public gaze.

Recently there appeared in the J.A.M.A., on page 98B of the February 12 issue a report on the Income in German Professions. We trust that this has been read by all members who are making any statements to the profession or public on this subject. We will not repeat it except to quote the last paragraph. "The median incomes are:

Civil Service	6,742 Reichmarks
Physicians	8,889 Reichmarks
Stomatologists	5,535 Reichmarks
Dentists	2,955 Reichmarks

Since a reichmark is approximately twenty cents, it is easy to figure out the income of the medical profession of Germany. Surely they are not being overpaid, even in a country where income is so low that it is difficult to get the necessities of life.

The Annual Conference of the Secretaries of Constituent State Medical Societies, held in Chicago November 19-20, has been reported in the organization section of the J.A.M.A. While the entire proceedings are of great interest to the medical profession we would suggest that every member of the Illinois State Medical Society read that part concerning Medical Defense, beginning on page 107C of the edition of February 19, 1938. This is a subject of great interest to the members from Illinois and one of the most urgent before the Council at this time as the final decision in the matter will be made at the annual convention in Springfield next May by the HOUSE OF DELEGATES. Every delegate should read up on the subject so that when the matter is presented he will have a knowledge as to why changes are to be made and be ready to have definite suggestions as to what the changes should be. It is to be hoped that the Council will have a tentative plan to present to the House of Delegates, in whose hands the final decision should and will rest.

The February issue of *California and Western Medicine* has a voluminous report on a new collection system in force in the Los Angeles County Hospital, which according to the report is a charity hospital, similar in some respect to the Cook County Hospital in Chicago. However, we hasten to remark that there are great differences in the attending staff in the two institutions. Recently they have started a plan of collecting from their charity patients, for services they have received in the above mentioned institution. This is the first time that any such plan has been brought to our notice and is accordingly of great interest. Although as usual the attending staff works for nothing, the hospital authorities are trying to collect for the hospital services in any and all manners possible. It makes one think of another attempt to pay for all the service except that rendered by the medical profession. It seems that the time will come when the medical profession will be obliged to call a halt on the free service demands of governmental units and demand that they receive the same consideration as the rest of the citizenry.

The annual meeting of the Northwest Regional Conference in Chicago on February 13, was well attended and the program presented was probably the best up to this time. One could not fail

to be impressed by the sincerity of the men present. Their reports showed that all over the middle West, the medical profession was making a sincere and usually successful attempt to meet the situations arising as a result of the depression and repression, so that the unfortunate would receive adequate satisfactory medical care without the question of recompense to the physician being the paramount one.

Having attended this meeting for the past several years, one in an official position, it has been most interesting to see the development of this Conference from a strictly local one in Minneapolis to now include most of the states of the Mid-West. It probably is the best conference on economic problems held in this country and great credit should be given the medical men of Minnesota for a real contribution to medical economics.

We have asked a first year man to give his impressions of the Conference and a member of this Committee, W. M. Hartman of Macomb, has prepared an article on his impression of the meeting and what was discussed there. If you missed the meeting read his report which is directly following this article.

E. S. HAMILTON, M.D.

Chairman of Committee

DOCTOR BILLS

To those interested in Medical Economics the Annual Meeting of the Northwest Regional Conference, held February 13 in Chicago, should be of unusual and absorbing interest. It was represented by attendance from a wide range of states, from West Virginia to Kansas; and it was characterized by interesting presentations of practical accomplishments in satisfactory and successful medical care by organized medicine.

The general subject of the conference was "Medical Care For All the People," and it represented what different county and state medical units had actually done by way of solution of some of our pressing economic problems. Instead of listening to various theories or proposed schemes we listened to what actually had been done. The voices of experience were speaking.

It was there I also heard the voice of our chairman requesting another report on Medical Service and Credit Bureaus in Illinois. There have been no outstanding developments since the survey made by the Committee on Medical Eco-

nomics and published in the ILLINOIS MEDICAL JOURNAL last July. In Peoria a private Credit Rating and Collection Bureau, which has been approved by the County Medical Society, is well supported and is giving satisfactory service. The Medical-Dental Service Bureau in Decatur continues a successful career. Group hospitalization has not come to Decatur I am told because of the efficient operation of the bureau.

The Medical Service or Credit Rating Bureau has afforded an approach and a solution to some of our economic problems by combining medical ethics and business methods in working out post-payment plans and methods for medical services rendered. It appears that the public is becoming alive to the possibilities of prepayment plans for sick benefits, especially for the expenses of hospitalization. From the viewpoint of the paying public and of the medical profession it is desirable to keep this movement away from lay domination and political control. We should give serious consideration to what is being accomplished in St. Louis where the medical profession appears to have the plan in satisfactory operation.

As pointed out by Fishbein, group hospitalization is rapidly becoming big business and as such may become increasingly difficult to control.

The program of the Northwest Regional Conference was an excellent demonstration of how private medical enterprise directed by organized State and County units, without any government participation or interference, was able to profitably serve a useful social function.

In West Virginia through the initiation of the State Medical Society and by means of a state wide survey of W.P.A. workers the tax paying public was saved the sum of over sixty thousand dollars by the physical rehabilitation of many of these men and their return to gainful occupation and removal from the relief rolls.

In Oakland County, Michigan, with a population of 200,000, through an Advisory Committee appointed by its County Medical Society, a system of medical relief was drafted and put into operation with remarkable results. Physicians were able to practice medicine in a natural wholesome physician-patient relationship. There was no dictation from the Social Service Department. Records were simplified and yet kept accurate. Costs per case were lessened. Patients were able

to call a physician direct without a written approval from the Social Service Department.

The Wisconsin State Medical Society is engaged in a thorough survey of rural medical care in that state. They evidently believe that this is America, and not Russia or Germany; and they are preparing themselves with first hand information on rural medical care, its sufficiencies and insufficiencies, and how to meet and direct them. For the expense of this undertaking each member of the State Society is assessed \$10.

Other states gave their experiences. Iowa, for example, was able to show how plans that were highly successful in one community would not work at all in another.

In conclusion, if there is one big lesson to be taken from the abundant material presented at this meeting it is this: the County Medical Society is the working unit of the medical profession. In it we decide for or against, and through it give decisions and expressions. "Whether we like it or not, we are like mariners. We may decide to steer this course or that, but if we are undecided and drift the ocean steps in and settles the matter."—Harry Emerson Fosdyke.
W. M. HARTMAN, M.D.

Correspondence

IT IS NOW THE CHICAGO HOSPITAL COUNCIL

To the Editor: The Chicago Hospital Association last Wednesday, February 23, 1938, voted to become the Administrators' Section of the Chicago Hospital Council. This affiliation represents a definite consolidation of hospital forces in this community with a consequent increase in efficiency and effectiveness.

All communications in the future should be addressed to this office, either to the Chicago Hospital Council or to the Administrators' Section of the Chicago Hospital Council. There is no longer a "Chicago Hospital Association."

ARNOLD F. EMCH,
Executive Director

THE NEPHRITIDES

Chicago, February 18, 1938.

To the Editor: I read with interest the article that appeared in the February issue of the ILLINOIS MEDICAL JOURNAL entitled, "Clinical Aspects of Nephritis," by R. F. Herndon. The

various classifications of the nephritides are correlated in an intelligent manner and the author has undoubtedly put much time and thought on this subject. I wish, however, to call attention to one statement made as regards treatment. On page 128 the author states: "There is no medical treatment or therapy for the renal condition itself and for hypertension . . . medicines are of no real value, except possibly the various sedatives."

I do admit that Dr. Herndon could cite "authorities" for this statement and that this opinion still remains the consensus among medical men. Nevertheless, some progress is being made and it is the better part of wisdom to move toward the ray of hope of the future than to remain with the utter hopelessness of the past. Without taking much space, I wish to cite a few men who got very promising results in the treatment of hypertension with drugs or diets. Schaefer; G. Fahr; Stieglitz, Althausen and Kerr, Barker; Blaisdell; Robert; Kylin; R. S. Palmer; Lissner, Brandabur, Harris; Elberg and Skulskry; Roch; Wolffe and Digilio and many others. Also Drouet; Jamin, Hutton, Martin and others have obtained good results with irradiation. These reports are all of the last five years or so, and some of the studies included hundreds of cases. In some of the series as high as 80 to 90 per cent were benefited. Dr. Herndon dealt with the older literature when hypertension was badly confused with renal disease, which gave a hopeless outlook to the picture. Hypertension is not often of renal origin, as a matter of fact most hypertensives when first seen by the doctor are apparently not suffering from badly damaged internal organs, their complaints are due for the most part to functional disturbances. With this condition of affairs it is indeed regrettable that we are fixing in the minds of doctors and patients that hypertension is an incurable disease.

Not all cases of hypertension are equally serious and some forms, especially in middle-aged women, are relatively mild. I know several persons who have carried high blood pressures for several years with no apparent injury to the heart or other organs; they seem to have adjusted to the hypertension. Instances of 10 to 15 years standing are not uncommon. This being the case the patient should be told that an adjustment to the disease is possible, this musters their own psychic powers toward recov-

ery. Hypertensives are very impressionable and Ayman has shown that 80 per cent will improve no matter what the treatment, provided they are seen regularly. Physicians should take a more hopeful attitude toward treatment, patients with hypertension should not be told that they are incurable, nor should there be a feeling of defeat and despair in the handling of such cases.

S. K. Robinson.

5210 Blackstone Avenue.

ALL CRAZY

Chicago, Ill., February 20, 1938.

To the Editor: "The entire world is now going crazy," writes Dr. John Kircher in the February issue of ILLINOIS MEDICAL JOURNAL. Phew! I have felt all along that things are in bad shape and this old world ready to go on the rocks almost anytime, but, after reading the doctor's article on sex crimes I am now ready to abandon all hope and must forever cast away every cherished ideal of helping to make this world a better place to live in! What's the use?

"I stated before that the entire world was going crazy," says Dr. Kircher, in the closing paragraph of his realistic writing, rather realistic I should say, even for a Medical Journal. The writer puts it that the war was America's greatest blunder and prohibition blunder No. 2, the latter chiefly engineered by women in co-operation with the Protestant Federation of Churches. Finding themselves duped with the prohibition movement, women again with the old alliance then sought to wipe out prostitution, and all this because women, according to Dr. Kircher's view, "must find an avenue for their heightened emotionalism."

Modern psycho-analysis has a way of probing the depths of a man's soul, and presumably that of a woman too, but I am loath to believe that its diagnosis of motivation is always correct and complete. The curse of the liquor shops and that of the brothel warrant movements for their eradication that I think are more deeply rooted than feminine emotionalism and that of sublimating a repressed sexual life.

Cheer up Dr. Kircher, the number of unfortunate and sexually ill-adjusted individuals one meets in practice cannot be taken as a cross-section of a people's life and motives.

Paul H. Wezeman.

5958 West Roosevelt Road.

MATERNAL WELFARE COMMITTEE ILLINOIS STATE MEDICAL SOCIETY

STATE ORGANIZATION NEARS COMPLETION

Reports from the county societies indicate the local organizations are rapidly becoming organized. It is hoped the remaining counties will soon follow. The success of any movement to reduce maternal, fetal and early infant mortality requires the individual support of every individual physician. Too often in the medical world like programs have been indulged in by lay groups and organizations entirely unfamiliar with the circumstances. The Illinois State Medical Society has profited by the experiences of other states and has taken the initiative in the hope to demonstrate what can be accomplished with medical men directing the entire program.

The purpose of the Maternal Welfare Committee is to improve obstetrical conditions in Illinois. This will be attempted by means of education of both the physicians and the laity. Already several counties of the state have held "refresher" courses for physicians. These consist of talks and demonstrations of modern obstetrical technique by teachers in that field. During the summer, also, courses will be offered at the University of Illinois Medical School. The facilities for securing knowledge of recent developments in obstetrics and pediatrics are now available and it rests only with the practitioner to take advantage of the opportunities.

The laity, if properly educated, will demand better obstetrical service. The modern advances as they occur should be brought to their attention through periodicals, newspapers and meetings addressed by physicians. This, as the health of the community becomes one of the extra professional duties of the medical man. He alone is able to weigh the merit of new advances and to teach the public their application.

The doctrine of first becoming familiar with successful advances and passing this knowledge to the patients is bound to bear results. There is no district in the state where such ideas may not be promoted.

Throughout the state we have encountered medical programs which have been thrust upon the medical profession by lay groups. An example of these are welfare stations, immunizing centers, etc. The good they did is unquestion-

able, but too many times without regard to the inherent rights of the physician.

This program is endorsed by organized medicine and is now being offered to the medical men of the state by a representative group of the state society. The success of the movement is entirely in the hands of the local man.

Already there are evidences of national movements fostered by lay groups in this field of maternal and child care, so naturally it behooves us to cooperate to the fullest extent in this movement while the program in its entirety is in the hands of members of organized medicine.

T. B. WILLIAMSON, M. D.,
Chairman.
JOHN F. CAREY, M. D.,
Secretary.

EDUCATIONAL COMMITTEE REPORT

February, 1938

SCIENTIFIC SERVICE COMMITTEE:

- Scott County, Iowa—C. B. Puestow.
- Will Grundy County—C. I. Reed.
- Union Perry Jackson—F. H. Falls—Obstetrical Program.
- Hancock County—A. C. Rambar—Pediatrics Program.
- Hancock County—A. F. Kanter—Obstetrical program.
- Effingham—Scott J. Wilkinson.
- Will-Grundy County—David S. Hillis—Obstetrical Program.
- Edwards County—Andy Hall.
- Henry County—Don Sutton.
- Henry County—Paul S. Rhoads.
- Champaign County—I. H. Neece, G. H. Gowan.
- Kankakee County—Carlo S. Scuderi.
- Madison County—R. K. Packard.
- Washington County—J. S. Templeton.
- Jasper County—Crawford—Lawrence—Frank Maple, Obstetrical Program.
- Jasper-Crawford—Lawrence—Gerald M. Cline—Pediatrics Program.
- Porter County, Indiana—Robert E. Cummings.
- Will-Grundy County—Italo F. Volini.
- Marion County—Channing W. Barrett.
- Iroquois-Ford County—A. J. Kobak—Obstetrical Program.
- Iroquois-Ford County—A. P. Borovsky—Pediatrics Program.
- Jefferson-Hamilton County—Richard Paddock—Obstetrical Program.
- Will-Grundy County—Robert A. Black.
- Franklin County—Ralph Knewitz.
- Franklin County—Walter Wilhelmj.

SPEAKERS BUREAU:

45—Programs were given by doctors in the following communities: Argo, Rock Island, South Chicago, West

Chicago, Zion, Robinson, Lake Forest, Chicago, Du-Quoin, Fairfield, Naperville, Maywood, Rantoul, Urbana, Aledo, Henry, Victoria, Oregon, Harvey, Springfield, Midlothian, Princeton.

RADIO:

16—Radio programs were given in the form of dialogues, round table discussions and talks.

Postal card announcements were mimeographed and sent out to persons who might be interested in listening to the programs.

NEWSPAPER SERVICE:

Articles written and approved on the following subjects:

This is Your Right.

Pale Face.

Immunity

Aids to Diagnosis.

Some Facts About the Season.

Some Common Terms.

Starting the Day Right.

Sinus Infection in Children.

How Are Your Health Habits.

Smallpox.

Surgery Advances.

899—Releases to newspapers—including regular health columns, monthly releases, special articles.

614—Releases announcing the Annual Meeting of the Illinois State Medical Society.

10—Releases announcing Knox County meeting.

50—Releases announcing Bureau County meeting.

29—Releases announcing Effingham County meeting.

AID TO COUNTY MEDICAL SOCIETIES:

147—Invitations prepared for Perry County.

300—Notices prepared for LaSalle County.

100—Notices prepared for Bureau County.

116—Notices prepared for Franklin County.

100—Notices prepared for Effingham County.

Letters telling of the Summer Round-Up were sent to officers of county medical societies.

Material and letters sent out for the Maternal Welfare Committee of the State Society.

LIBRARIES:

84—Health articles sent to Chicago libraries.

154—Health articles sent to downstate libraries.

238—Articles on Socialized Medicine sent to Libraries.

LAITY:

1,988—Reprints of Doctor Neal's paper before the State Meeting and Doctor Fishbein's talk before group in the West sent to prominent laymen in the State.

Material prepared for the Health Chairmen of the Illinois Federation of Women's Clubs.

MISCELLANEOUS:

Material furnished medical societies in Michigan, California and Iowa.

Cooperated with the Illinois Congress of Parents and Teachers, Illinois Federation of Women's Clubs, Chicago Dental Society in an exhibit for their Annual Mid-Winter Meeting, American Legion's Medical Commission, Woman's Auxiliary, National Youth Administration of Illinois.

Respectfully submitted,
JEAN McARTHUR, *Secretary*.

STATE DEPARTMENT OF PUBLIC HEALTH EDUCATIONAL COMMITTEE, ILLINOIS STATE MEDICAL SOCIETY

POST-GRADUATE COURSE IN OBSTETRICS AND PEDIATRICS
GIVEN BY THE DEPARTMENTS OF OBSTETRICS AND
PEDIATRICS AT THE RESEARCH AND EDUCATIONAL HOSPITAL

1819 WEST POLK STREET, CHICAGO, ILLINOIS

Beginning every Monday morning at 9:00 for one week, beginning July 5 and continuing through July and August.

Obstetrics. The courses will be given at the Research and Educational Hospital, and will consist of outpatient dispensary clinics, special lectures, manikin course, and special clinics together with delivery room observation courses and home deliveries in the outpatient service. Opportunity will be afforded for round table discussions of complicated cases occurring in the practice of the members of the course. Opportunity will be provided for work in diagnosis of presentation, position, taking of measurements on living patient in the dispensary together with complete case history-taking, with discussion of the diagnosis and prognosis by members of the staff. Various obstetrical operations on the manikin will be performed under supervision. Such operative procedures as are indicated will be demonstrated to the whole group during their stay on the service. Ward walks will be given in the obstetrical wards during which antepartum and postpartum complications will be discussed by members of the staff of the College of Medicine. Speakers to be invited for lectures from other universities in the city will cover special subjects.

Pediatrics. The pediatric course will cover outpatient clinics in the Research and Educational Hospital, ward walks and special lectures. Extra time can be devoted to pediatrics by members of the group who wish that privilege.

Registration fee—ten dollars—checks payable to University of Illinois.

Registrar, G. R. Moon, 1853 W. Polk Street, Chicago, Ill.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY

The general oral, clinical and pathological examinations for all candidates (Groups A and B) will be conducted by the entire Board, meeting in San Francisco, California, on June 13 and 14, 1938, immediately prior to the meeting of the American Medical Association.

Application for admission to the June 1938 Group A examinations must be on an official application form and filed in the Secretary's Office before April 1, 1938.

The annual informal Dinner and General Meeting of the Board will be held at the Palace Hotel, San Francisco, on Wednesday evening, June 15, 1938, at seven o'clock. Dr. William D. Cutter, Secretary of the Council on Medical Education and Hospitals of the American Medical Association will be the guest speaker, and the Diplomats certified at the preceding days' examinations will be introduced individually. All Diplomats

are invited to attend the dinner meeting, and to bring as guests their wives and any persons interested in the work of the Board.

For further information and application blanks address Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburgh (6), Pennsylvania.

ASTOUNDING FACTS ABOUT TOBACCO

M. R. Ferris, in *Health Culture*, has tabulated the following data relative to the hazard of tobacco using:

There is enough nicotine in the average cigar to kill two normal men. It is estimated that one-third of all loss by fire is caused by tobacco.

A leech is instantly killed when it sucks the blood of a habitual smoker.

Two thousand seven hundred Americans begin the tobacco habit each day.

Our tobacco expense is greater than the cost of the United States government.

The annual tobacco expense in the United States would build seven Panama canals.

Our annual tobacco bill amounts to twenty-five dollars per capita in the United States.

The tobacco habit was begun in America, and has extended to every nation on earth.

In Russia, Turkey and Persia, the use of tobacco has been at times punishable by death.

In 400 years the tobacco habit has fastened itself upon about half the population of the world.

Among 412 young men examined by a naval enlistment officer at Peoria, Illinois, 298 were rejected.

Babies have been killed by breathing the tobacco smoke with which a smoker filled an unventilated room.

Connie Mack, the famous baseball hero, made it a rule never to employ baseball-league men who use tobacco.

Prussic acid is the only substance more poisonous than nicotine.—M. Orfila, President Paris Medical Academy.

Six Canadian insurance companies find the mortality rate of smokers to increase in about the same proportion as that of drinkers.

Clark College honors were granted in athletics and scholarship to smokers and non-smokers, in the ratio of 16 to 58.

Tobacco has been known to produce a nervous condition similar to delirium tremens. Physicians call it tobacco tremens.

At Columbia University 10 per cent of the smokers failed to pass an examination in which 4 per cent of the non-smokers failed.

The Indians used to poison their arrows by dipping them into nicotine, thereby causing convulsions and often death from arrow wounds.

Statistics indicate that 26,000 cases of pneumonia die annually in the United States, that would recover were the patient not addicted to tobacco.

During nine years' study of students at Yale, it was found that the lung capacity of non-smokers developed 77 per cent more than that of smokers.

Toxic anginas (heart disease, caused by poison) are

most frequently caused by tobacco.—Dr. Alexander Lambert, in Tice's Practice of Medicine.

Many heavy drinkers, who are trying hopelessly to cease their periodic sprees, are merely victims of chronic tobacco poisoning.—Dr. Alexander Lambert.

INTERNATIONAL MEDICAL POSTGRADUATE COURSES IN BERLIN

In the spring of 1938, the following international medical postgraduate courses are prospected:

1. Constitutional pathology and clinical medicine. At: I. Medical University Clinic of the "Charité." (From 21st to 26th February.) Fee: 50,— RM.

2. Frequent mistakes in the diagnosis and treatment of internal diseases and their avoidance. Taking place at: II. Medical University Clinic of the "Charité." (From 28th February to 5th March.) Fee: 50,—RM.

3. Postgraduate course on nourishment for healthy and sick. (From 7th to 12th March.) Fee: 50,— RM.

4. Course on tuberculosis. At: Berlin Municipal Hospital for Tuberculosis. (From 14th to 19th March.) Fee: 50,— RM.

5. Postgraduate course in diseases of the ear, nose and throat in the University Clinic for Diseases of the Ear, Nose and Throat to the "Charité." (From 28th February to 12th March.) 150,— and 100,— RM respectively.

6. Postgraduate course for surgeons in the Chirurgical University Clinic of the "Charité." (From 25th to 30th April.) Fee: 70,— RM.

7. Postgraduate course for oculists in the University Ocular Clinic. (From 21st to 26th March.) Fee: 75,— RM.

8. Recent results in the field of the ray-therapy. (From 2nd to 7th May.) Fee: 60,— RM.

9. Propaedeutic respectively additional training course in homeopathy. (From 25th April to 21st May.) The course is divided into two parts. The fee for part one is 25,— RM; for both parts together 75,— RM. Part two can be taken independently from part one at a fee of 50,— RM; for assistant doctors 15,—, 40,— and 30,— RM respectively.

10. Special courses in all branches of medicine with practical work at the bedside and in the laboratory, to be held every month. For these courses participants are requested to communicate their wishes in order to find a complete program on their arrival.

Courses 1 to 9 will be held in German, and the special courses also in foreign languages.

For programmes and further information apply to the Geschäftsstelle der Berliner Akademie für ärztliche Fortbildung, Berlin, NW 7, Robert-Koch-Platz 7 (Kaiserin Friedrich-Haus).

Foreign doctors and German doctors resident abroad are granted a reduction of fare of 60% on the German Railways Company's lines; a foreign doctor can reduce the cost of his stay considerably by utilizing what are called "registered marks"; it is advisable to arrange matters with the local bank before starting.

THE AMERICAN PHYSIOTHERAPY ASSOCIATION VOCATIONAL SERVICE

MISS EDITH MONRO

BOSTON, MASSACHUSETTS

The American Physiotherapy Association was organized very soon after the close of the World War, the charter members being former Reconstruction Aides in service. Since then the membership has increased to more than eight hundred. The present requirements for membership are: 1. One year's practice in physical therapy within two years of graduation from an approved school of physical therapy. 2. An approved course in physical therapy of not less than nine months, following graduation from a school of nursing or physical education which meets the requirements of the individual states. These are the requirements which have been approved by the Council on Medical Education and Hospitals of the American Medical Association. The object in having these qualifications for membership is to provide for the hospitals, schools for crippled children, and offices of physicians, trained physiotherapists who are able to follow the physicians' orders intelligently and thoroughly.

One of the purposes of the American Physiotherapy Association is to "co-operate with and work only under the prescription of members of the medical profession." 483 Beacon Street.

CAL-C-TOSE "ROCHE"

Name Changed from Cal-C-Malt

Physicians accustomed to writing prescriptions for or recommending Cal-C-Malt "Roche" are urged to make special note of an announcement received from Hoffmann-La Roche, Inc., makers of the product, that its name has been changed to Cal-C-Tose "Roche." This step was taken as a safeguard against possible confusion of the product with other preparations featuring the term "malt."

In the two years since this "Roche" product was first announced, it has become the favorite chocolate nutritive and vehicle for vitamin C of many physicians. A recent "Roche" letter to the medical profession pointed to its wide use in hospitals and to the fact that some institutions buy it regularly by the ton. In the field of tuberculosis Cal-C-Tose enjoys especially wide use. A year ago C. K. Petter, M. D., reporting a series of 73 tuberculous patients who had been on special Cal-C-Tose feedings for several months, called attention to the ease with which the deficiency of vitamin C now known to exist in these cases can be corrected by administration of Cal-C-Tose and to the encouraging weight gains and generally evident improved feeling of well being reported by patients. Reprints of this article are available, and as a further service to physicians interested in making quantitative determinations of vitamin C in the urine, the Medical Division of Hoffmann-La Roche at Nutley, N. J., is glad to supply pamphlets describing the technic for carrying out the Tillmans titration against dichlor-phenol-endo-phenol.

In order to minimize any misunderstandings occa-

sioned by changes in name, particularly to avert any doubt in the purchaser's mind as to whether the product supplied to him is the genuine original, all 12-ounce trade packages and 5-pound "family size" and hospital packages of Cal-C-Tose will for several months have stamped conspicuously across their labels "formerly known as Cal-C-Malt." The change in name will also be emphasized in all Cal-C-Tose sample packages and descriptive literature.

READ SURVEY GRAPHIC FOR MARCH

Is it too much to suggest that we in the United States will have to face the same sort of economic-medical problems that England has had to face? Indeed, aren't these problems already here and isn't it time for us to consider them, as Dr. Douglass Orr does in *Survey Graphic for March*? Concluding his extensive study of the 25-year-old British Health Insurance System he compares the actualities of the British scheme with the ten principles laid down by the A.M.A. to be observed in organizing medical service in this country, and discusses the probable lines of development.

Single copies of this issue sell for 30 cents.

"ROCHE" OPENS NEW YORK SCIENTIFIC OFFICE

For the convenience of members of the medical profession desirous of maintaining contact with its Medical Division and Scientific Departments, Hoffmann-La Roche, Inc., announce the opening of offices at 500 Fifth Avenue, New York City. Out of town physicians planning to visit New York are invited to visit these offices, where appointments will gladly be made with members of the staff in Nutley or for a visit to Roche Park across the Hudson River in Jersey.

The New York offices will be in the charge of Dr. Edgar Sampson, whose name has long been associated with the pharmaceutical industry as former executive vice-president of the Schering and Glatz Company.

Hoffmann-La Roche wish it to be emphasized that the New York offices are strictly for scientific contact and that no commercial activities will be carried on there, nor will there be any maintenance of stocks of "Roche" products. All of these commercial and other activities will be carried on entirely at Nutley, as heretofore.

VITAMIN B: A SUMMARY

During the past ten years the vitamins as a group have been the subject of experimental and clinical studies, rivaling those previously directed toward other dietary essentials—protein, carbohydrate, fat, and minerals. Several vitamins have been isolated in pure form and certain of these have been synthesized. Among the more interesting from a clinical standpoint is vitamin B₁ which has been isolated, chemically identified, and synthesized. This vitamin is known officially as thiamin chloride.

Deficiency of vitamin B₁ in man and animals causes predictable disturbances of function referable to the nervous system, the gastro-intestinal tract, and the hematopoietic system. There seems also to be an un-

doubted relationship between carbohydrate metabolism and availability of vitamin B.

Continued deficiency of vitamin B inevitably leads not only to disturbed function of peripheral nerves but also to characteristic pathologic changes in the nerve fibers. Neuritis is one of the most commonly encountered symptoms of mild or moderate deficiency and brilliant results follow vitamin B therapy in these cases.

No less characteristic and certain are the disturbances of function referable to the gastro-intestinal tract due to deficiency of vitamin B. The earliest and, in some respects, the most serious symptom is anorexia. Reduction in gastric acidity (Joffe and Jolliffe, *Am. J. Med. Sc.* 193:501, 1937), pancreatic enzyme activity (Kik, Sure, and Buchanan, *Am. J. Dig. Dis. & Nutrition* 3:490, 1936), and decreased tonus of intestinal musculature (Sparks and Collins, *Am. J. Dig. Dis. & Nutrition* 2:618, 1935) resulting in constipation, are common findings in mild to moderate deficiency.

Vitamin B appears to act synergistically with iron and the specific antianemic substance, present in stomach tissue and liver extract, in the treatment of anemia. Whether vitamin B improves absorption and utilization of the specific substances or whether the vitamin itself plays some more intimate role in blood regeneration is not, as yet, established. There is, however, experimental and clinical evidence indicating that vitamin B deficiency contributes to the development of anemia and retards blood regeneration, whereas the administration of this factor has the opposite effect.

The actual vitamin-B need in a given case varies directly with the carbohydrate content of the dietary. Cowgill takes this fact into consideration when he places the daily requirement for this vitamin at 10 international units per 100 calories of diet. Vitamin B favorably influences insulin activity. This has been shown experimentally by Martin (*Ztschr. f. physiol. Chem.* 248:242, 1937), Aszodi and Mosonyi (*Klin. Wchnschr.* 16:1214, 1937), and Lajos (*Biochem. Ztschr.* 284:279, 1936), and clinically by Vorhaus et al. (*Am. J. Dig. Dis. & Nutrition* 2:541, 1935) and Monanni (*Ztschr. f. klin. Med.* 132:812, 1937). Peters and co-workers further demonstrated the necessity for vitamin B in the oxidation and removal from the tissues of lactic and pyruvic acids—intermediate products of carbohydrate metabolism.

Does the average American diet supply an abundance of B₁? Probably not. Vitamin B₁ is the factor most likely to be deficient in the average diet due to the inclusion of much carbohydrate and highly milled grain products from which the germ and husk have been removed. The recent preliminary report by Stiebling (*M. Woman's J.* 44:313, 1937) indicates that many families, even when spending fairly generous amounts for food, obtain less calcium, vitamin A, and vitamin B than is conducive to optimum health. —P. D. & Co.

THE PNEUMONIA SEASON IS UPON US

According to a release issued February 1 by the State Department of Health.

Pneumonia is usually more prevalent in Illinois during February and March than at any other time of year.

Ordinarily mortality from pneumonia runs about 300% higher in those months than in July and August. The number of fatalities attributed to this disease varies from 700 to 900 per month in mid-winter compared with 200 to 250 in mid-summer.

Cold, changeable weather is probably less responsible for the higher seasonal prevalence of pneumonia than the habits that prevail among human beings during the winter. This is suggested by the fact that mortality from pneumonia is nearly always substantially higher in cities than in rural areas of Illinois. Furthermore, severely cold waves and sharp variations in the weather early in the winter are not followed, as a rule, by increases of corresponding magnitude in the prevalence of and mortality from pneumonia. Higher rates during the late winter and early spring imply the cumulative effects of unhygienic habits throughout the season of cold weather.

Lack of sunshine, faulty diets, overheated living and working quarters, smoky air, reduction of life in the open, wet feet for considerable periods of inactivity and dissipation are among the factors which predispose to pneumonia. Various diseases such as colds, influenza and measles favor the onset of pneumonia. These influences begin to operate at the onset of cool weather in the autumn and become more intense as the season deepens into winter. The cumulative effect shows up in higher mortality rates from pneumonia and associated diseases in the late winter and early spring.

Pneumonia can be much more successfully treated now than ever before. The disease may be caused by any one of thirty odd types of pneumococci. Serum can be used to great advantage in treating several of the most common types as well as some of the most deadly. prompt medical attention, the immediate laboratory treatment of sputum to determine the type and treatment with serum of appropriate type are the three essential steps in this procedure. Best results are obtained when all this is accomplished by the end of the third day after onset of symptoms. The diagnostic laboratories of the State Department of Public Health as well as many private diagnostic laboratories are prepared to do *typing* for pneumonia.

CLINICAL WEEK AT THE MAYO FOUNDATION

A special program of lectures and demonstrations in surgery and medicine will be held under the direction of The Mayo Foundation from March 28 to April 1, inclusive. Symposia on gastric diseases, diseases of children, cardiology, urology and backache, and conferences on roentgen, radium and physical therapy will be included. Visiting physicians are invited to attend.

UNIVERSITY OF CALIFORNIA PUBLICATION IN PHARMACOLOGY

We are glad to announce the inauguration of *The University of California Publications in Pharmacology*, under the editorial supervision of Doctors Gordon A. Alles, T. C. Daniels, Mayo H. Soley, and Chauncey D. Leake. These studies will appear irregularly in the series, but will be consecutively paged to form volumes

of about 500 pages. The subscription price per volume will be \$5.00. Bills, however, may be rendered annually on July 1st for the issues received to that date. The first of these papers should appear early in the spring of 1938, and it is expected that a volume will be completed about every two years.

The University of California Publications in Pharmacology will contain reports of original pharmacological studies from the University laboratories, together with occasional review and general articles relating to the science.

1. Prolegomenon to Current Pharmacology, by C. D. Leake.

2. Chemotherapy of Leprosy: Clinical Evaluation of Anti-Leprosy Drugs, by H. H. Anderson, G. A. Emerson, C. D. Leake, P. A. R. Cerqueira, E. Hurwitz and H. Moura-Costa.

3. Local Anesthetic Activity of Certain Ethyl Ester Derivatives of 2-Furoic Acid, by N. M. Phatak.

4. Skin Absorption of Insulin with *Mucuna pruriens*, by B. E. Abreu and G. A. Emerson.

5. Narcotic Properties of Alkoxyethyl Carbamates, by G. A. Emerson and B. E. Abreu.

6. Notes on the Pharmacological Action of Dinitrophenylmorphine, by G. A. Emerson, S. J. Klyza, N. M. Phatak and C. D. Leake.

7. Metabolic and Respiratory Effects of Dinitrophenylmorphine, by B. E. Abreu, N. M. Phatak, G. A. Emerson and C. D. Leake.

8. Blood Sugar Response of Habituated Rabbits to Increments in Dosage of Morphine, Dihydromorphinone and Dinitrophenylmorphine, by G. A. Emerson and N. M. Phatak.

9. Comparative Physiological Actions of Phenethylamine and of the Betahydroxyphenethylamines, by G. A. Alles and P. K. Knoefel.

These studies will be produced in paper covers and printed in the usual style of our monographs in series, page size 6½ by 9¼ inches.

UNITED STATES CIVIL SERVICE EXAMINATIONS

MEDICAL PATHOLOGIST (RESEARCH), \$3,800 A YEAR

ASSOCIATE MEDICAL PATHOLOGIST (RESEARCH),

\$3,200 A YEAR

National Institute of Health, U. S. Public Health
Service, Treasury Department

Applications must be on file with the United States Civil Service Commission at Washington, D. C., not later than the following dates—

(a) March 21, 1938, if received from States other than those named in (b) below.

(b) March 24, 1938, if received from the following States: Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming.

The United States Civil Service Commission announces open competitive examinations for the positions named above. Vacancies in these positions in Washington, D. C., and in the field, and in positions requiring similar qualifications will be filled from these examinations, unless it is found in the interest of the service

to fill any vacancy by reinstatement, transfer, or promotion. The salaries named above are subject to a deduction of 3½ per cent toward a retirement annuity.

Duties.—To perform, with responsibility appropriate to the grade, research in medical pathology.

Basis of Ratings.—Competitors will not be required to report for examination at any place, but will be rated on the extent and quality of their education and experience which are relevant to the duties of the position applied for, on a scale of 100, such ratings being based upon competitors' sworn statements in their applications and upon corroborative evidence.

Statements concerning qualifications will be verified by the Commission; exaggeration or misstatement will be cause for disqualification.

Applicants must file the following with the United States Civil Service Commission, Washington, D. C., not later than the closing date specified at the head of this announcement:

1. Application Form 8, including the Officer's Certificate of Residence, Special Form 2398, and Physical Fitness Form 13 (yellow), all properly executed, the last-named to be executed by a doctor of medicine. Only one application form should be filed by a person wishing to apply for both of these positions. (See paragraph headed "Assignment of grade," below.)

2. Applicants who wish to claim veteran preference must file Preference Form 14 (blue), properly executed and accompanied by the documentary proof required therein.

3. Foreign-born applicants must submit with their applications proof of United States citizenship.

4. Applicants must submit with their applications their unmounted photographs, taken within two years, with their names written thereon. Proofs or group photographs will not be accepted. Photographs will not be returned to applicants.

5. In addition to answering the questions in the application form, applicants must write plainly and legibly in their own handwriting a statement of approximately 200 words setting forth what elements in their experience particularly fit them to perform the duties of the position applied for; and why they believe such experience will help them fill this position.

6. Applicants must submit with their applications a list of publications, reports, programs, or writings, with copies whenever possible, to be used as corroborative evidence of the experience claimed.

Application Forms.—The necessary forms may be obtained from the Secretary, Board of United States Civil Service Examiners, at any first-class postoffice, from the United States Civil Service Commission, Washington, D. C., or from the *United States Civil Service district office* at any of the cities given below (the title of the examination desired should be stated):

Atlanta, Ga., New Post Office Building.

Boston, Mass., Post Office and Courthouse Building.

Chicago, Ill., New Post Office Building.

Cincinnati, Ohio, Post Office Building.

Denver, Colo., Post Office Building.

New Orleans, La., Customhouse.

New York, N. Y., Federal Building, Christopher St.

Philadelphia, Pa., Tenth Floor, Gimbel Building.

Seattle, Wash., Federal Office Building.
 St. Louis, Mo., New Federal Building.
 St. Paul, Minn., New Post Office Building.
 San Francisco, Calif., Federal Office Building.
 Honolulu, T. H., Federal Building.

Balboa Heights, Canal Zone, *Secretary, United States Civil Service Board.*

San Juan, P. R., *Chairman, Puerto Rican Civil Service Commission.*

The exact title of the examination desired, as given at the head of this announcement, should be stated in the Application Form.

A THREE-STAGE OPERATION FOR REPAIR OF HYPOSPADIAS: REPORT OF CASES

Since 1932, Oswald Swinney Lowsley and Colin Luke Begg, New York (*Journal A. M. A.*, Feb. 12, 1938), have operated on ten patients with marked hypospadias by their new method. The principles involved in the procedure are: (1) diversion of the urinary stream by suprapubic suction drainage, (2) careful preoperative antisepsis of the operative site, (3) strict asepsis during all steps of the operative procedure, (4) prevention of tension of any of the parts involved and (5) avoidance of pressure on the tissues by bandages, hemorrhages, sutures or any other agency. The new urethra is constructed from the flexible skin of the scrotum, joined with silver wire (because of its antiseptic qualities) and turned downward so that the penis is readily attached to it. A piece of silkworm gut is fixed in the new tube and left until the final stage of the operation. The second stage of the operation consists in excising the usual scar tissue on the under surface of the penis, fixing the split glans penis around the new meatus and suturing the penis over the new tube. In the third and final stage the penis and the attached newly constructed urethra are freed from the scrotal bed and brought up to the normal position. Nine successful operations of the ten performed warrant a continuation of the method. The one death resulted from pituitary dysfunction, which was not recognized before operation, in a youth aged 14.

IDIOPATHIC HYPOCHROMIC ANEMIA

1. Idiopathic hypochromic anemia, in most cases, is a chronic hemorrhagic anemia due to menstrual blood loss and an improper absorption of iron due to deficient gastric secretion. There is no evidence of faulty iron metabolism.

2. "Simple achlohydric anemia" is therefore a preferable term.

3. Massive doses of iron produce a more rapid hemoglobin response in hypochromic anemia than do smaller amounts, although 1 gm. and 3 gm. of iron and ammonium citrates per day produce a fairly satisfactory increase in some cases even though achlorhydria is present. These amounts lead to a storage of iron in addition to that used in hemoglobin formation.

4. Neither copper nor a liver fraction, when given in addition to the iron, increased the rapidity of hemoglobin production.

5. Iron, administered intramuscularly in a tolerated dose, did not produce a hemoglobin response.—W. M. Fowler and Adelaide P. Barer in *Amer. J. Med. Sciences*, Nov., 1937.

STANDARD CLASSIFIED NOMENCLATURE OF DISEASE

Until relatively recently, the terminology employed in each new nomenclature has represented a personal and individual choice. The system of the Standard Classified Nomenclature of Disease is the result of an effort to remedy the existing confusion. In addition to the Commonwealth Fund much credit is due to Dr. H. B. Logie, the executive secretary of the National Conference until the work was taken over by the American Medical Association (*Journal A. M. A.*, Feb. 12, 1938). The Standard Classified Nomenclature of Disease was prepared according to a dual method of classification (anatomic and etiologic) and proposes to include every disease clinically recognizable. It aims also to avoid repetition and overlapping and to classify disease in a logical manner. Secondary diagnoses can be coded in a manner exactly similar to the primary. The installation of the system requires little expense or difficulty in addition to the purchase of the Standard Classified Nomenclature of Disease.

HEART FAILURE

How are we to reach that class of individuals who have pathologic conditions which predispose to heart failure and of which the individual is probably unaware? First, by urgently advocating periodic physical examinations for everybody, and second, by keeping under observation for a considerable time after the acute stage those who are known to have had rheumatic fever, chorea, diphtheria, influenza or other infectious diseases which are so frequently complicated by cardiac involvement. In this way we may prevent or at least postpone the final breakdown and reserve for the patient many years of useful and comfortable life.—J. E. Knighton, Sr., M.D., in *Tri-State Med. J.*, Dec., 1937.

THE MONTH'S BEST LAUGH MOUNTAIN JUSTICE

The stranger was traveling through a southern mountain region when suddenly he heard a burst of gunfire. He ran through the woods to a clearing just in time to see a group of men disappearing on the other side. Beside a cabin door stood a mountaineer and on the ground lay a woman.

"My God, man, what happened?" shouted the stranger.

"Feud," said the mountaineer.

"But who is that woman that was killed?"

"Wife," replied the mountaineer.

"Good Lord, man," shouted the stranger, "you don't seem very put out about it!"

The mountaineer shifted his cud of tobacco and thought a minute.

"Wal," he drawled, "she was aillin' pritty bad anyway, an' I'd had a doctor bill on 'er sure as hell."

Original Articles

PROBLEMS BEARING ON THE PATHOGENESIS AND TREATMENT OF ACUTE POLIOMYELITIS

PAUL H. HARMON, PH. D., M. D.

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AND

HENRY N. HARKINS, PH. D., M. D.

CHICAGO

During the past decade an intensive attack has been made upon the infantile paralysis problem by experimental methods. While a similar disease is readily induced in the common laboratory monkey (*Macaca mulatta*) by passage of animal adapted virus, it is now believed by most workers in this field that deductions based upon studies of the experimental disease have been too readily applied to the disease in man. Instillation of virus into the nares serves to produce poliomyelitis but it is less certain that the infectious agent always takes this route in man. In this latter host, the virus is located in other available non-neural locations. The significance of the difficulty of isolating virus from the nasopharynx will be clarified in a later section of this paper. Evidence has now accumulated showing that there are fundamental biologic and immunologic differences in poliomyelitis viruses from various epidemics. These have not been fully appreciated by investigators of the experimental disease, who have employed passage strains of relatively constant effect. Virus neutralizing substances measured in terms of these strains are the only antibodies definitely associated with the infection but they cannot be clearly linked with resistance in the disease of either man or monkey. It is our intention in this review to present the modern outlook in prophylaxis and treatment of this disease.

Pathogenesis of Poliomyelitis: Sites of Virus Isolation. It is generally accepted at the present time that the natural portal of entry of the virus in man is the nasopharynx. It is believed to ascend over the neural fibrillae that perforate the ethmoid bone. The experimental method of drop-

ping virus preparations into the nares is a purely artificial condition involving overwhelming dosage. Experimental infection also occurs when the virus is introduced by the gastrointestinal tract especially when increased intraintestinal pressure, direct contact with myenteric nerves,¹ slowed peristalsis (by opiates²) or other altered conditions obtain.³ That numerical successes are less by this route is immaterial since the low natural incidence of poliomyelitis indicates that some special condition must obtain in the host, since the virus is widely disseminated.⁴

If the nasopharynx is the natural portal of entry of the virus in man, it should be isolated with considerable regularity, unless evanescent or present in small quantity. We⁵ were unable to isolate it in a single instance from twenty patients shortly after paralysis in the Chicago epidemics of 1935 and 1936. Paul and his co-workers⁶ obtained it only once from forty abortive cases and contacts in Los Angeles in 1934, while Kramer and his colleagues⁷ likewise obtained only two positive isolations from twenty convalescents. Others⁸ have been totally unable to obtain it from the upper respiratory passages. In all, the poliomyelitis virus has been isolated from this site only thirteen times during thirty years of experimentation (see Paul, Trask and Webster⁶ for summary). A further complication is the fact that the virus can be recovered from the nasopharynx of monkeys that have been infected by the cerebral route⁹ and from certain animals that have received an intravenous injection of the virus.¹⁰ The virus found in the nasopharynx of man might be regarded as egressing rather than a residuum of the original infecting dose. Then, too, there are a number of viruses (rabies, louping-ill and vaccinia which infect by the nasal route in the laboratory, but which in natural infection take a different pathway.

Investigation of the intestinal tract of man for the virus of poliomyelitis has been neglected since the early work in Sweden¹¹ was discredited upon the basis that lesions in the spinal cords of their monkeys were not typical. We⁵ took up this work upon the same patients from whom we were unable to isolate the virus from the nasopharynx in the Chicago epidemics of 1935 and 1936. In working with twenty patients, we were able to obtain five isolations from rectal washings of four different convalescents, all within the first ten days after onset of the disease. Microscopic alter-

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Supported by a grant from the President's Birthday Ball Fund for Infantile Paralysis Research.

Read before the Section on Pathology and Physiology at the Eighty-eighth Session of the American Medical Association, Atlantic City, June 11, 1937.

ations in the spinal cords of these monkeys were typical of poliomyelitis and passage of the infectious agent to other animals was accomplished in two of five instances. Such findings do not necessarily signify the gastrointestinal tract as the portal of entry, as this virus may have been swallowed, since Clark and his associates¹² and Scherp^{8d} have shown that it can pass through the intestinal tract in monkeys and be recovered from rectal washings. By the same token, failures to infect monkeys by the gastrointestinal tract (reviewed by Flexner^{8d} and by Lennette and Hudson¹³) have little significance, as the epidemiological evidence indicates poliomyelitic infection of the nervous system in man to be an exceptional occurrence.¹⁴ The milk-borne epidemics reported by Aycock¹⁵ were probably instances of alimentary infection. It can not as yet be considered as proven that the intestinal tract is the portal of entry in man, but the aforementioned evidence, as well as our¹⁶ inability to find pathological changes in the olfactory tracts of nine fatal human cases from the same epidemic, all point to the importance of the intestine in this epidemic and specifically in the cases so examined.

The above deductions are based upon the recent experiments of Sabin and Olitsky,¹⁷ which clearly established the olfactory bulbs as indicators of the pathway taken by the virus. Pathologic changes were found in this portion of the nervous system only when the virus utilized this route, whether it was administered nasally or by vein. If these experiments are directly applicable to man, an extra-nasal route was of importance in fatal cases from the New York epidemic of 1931, as Smith¹⁸ found changes in less than a fourth of the bulbs from forty cases. It is entirely possible that in man alternative routes are utilized as the evidence of changes in a portion of the olfactory bulbs studied by Smith, as well as virus isolations from the nasopharynx constitute positive proof.

While an opinion has been built up during recent years that poliomyelitis is exclusively a disease of the nervous system and that the virus is strictly neurotropic,¹⁴ the finding of this agent in the spleen of monkeys infected cerebrally¹⁹ and in mesenteric lymph nodes in man and monkey²⁰ cannot be readily explained except by postulating either the presence of virus in the blood or the intestinal portal of entry in man. The older

failures of virus isolation in man are valueless, as it is necessary to perfuse organs free of blood before such an examination is reliable. It must be remembered that the virus has never been detected in the blood stream of man, while it has been occasionally found in that place in monkeys inoculated cerebrally.²¹ This, and the fact that a large number of human patients have neutralizing antibody in the blood early in paralysis and in some instances prior to the onset of paralysis,²² adds two other items to the discrepancy between human and simian poliomyelitis. Isolation from extraneural sites in man can probably never be satisfactory as the variable effect of different viruses is further complicated by the presence of neutralizing substances in both the nasopharynx (23% of cases, Howitt;²³ 26%, Harmon et al.⁵) and in the rectum in 60% (Harmon et al.⁵). These data were obtained in terms of the PMV strain. Their incidence may possibly be greater if measured against other strains.

Isolation of Virus from the Central Nervous System: Virus Strains. In addition to possible lack of virus in the locations mentioned above, we are also dealing with an unsatisfactory indicator of poliomyelitis virus, as transfer from man to monkey is accomplished irregularly, even when central nervous system tissues are used. The ease of transfer varies with strains from different epidemics, the route of inoculation, and unknown factors that are responsible for "virulence" (review by Trask et al.²⁴). We were able to obtain virus passages to a first generation of monkeys from the spinal cord or medulla from only four of nine fatal human cases in the 1936 epidemic in Chicago. Only one of these strains was finally established in monkeys by serial passage. The severity of the experimental disease produced by this strain is strikingly reminiscent of poliomyelitis in man. Table 1 gives a summary of

TABLE 1. SYMPTOMS AND OUTCOME IN MONKEYS INOCULATED WITH 1936 VIRUS (CHICAGO)

Inoculated	Results	No.	Per Cent.
36 Monkeys.	Failed to take.....	12	33.3
	Non-paralytic attack	4	11.1
	Facial paralysis	5	13.9
	Mild paralysis	11	30.5
	Moderate paralysis	9	25.0
	Death	0	0.0

the results obtained in the cerebral inoculation of thirty-six monkeys. The fatality rate was nil. Of those initially paralyzed, complete recov-

ery occurred in all but 6 (16.6%). This is in marked contrast to the severe and extensive paralysis with high fatality obtained with monkey passage strains (Aycock and PMV). The immunologic characteristics of this strain are of interest. Animals convalescent from the PMV strain exhibit an almost complete immunity to cerebral reinoculation of the Chicago strain. On the other hand, three of five monkeys convalescent from the Chicago strain (two still having residual paralysis) came down with typical prostrating quadriplegia after cerebral reinoculation with the PMV strain. Such findings are reminiscent of Howitt's²⁶ experience with a strain from a Sacramento, California, epidemic, of Trask and his coworkers²³ comparing passage strains immunologically with serums from two eastern 1931 strains and two California strains from the 1934 outbreaks, and of the now classic observations of Burnet and MacNamara,²⁷ who established an immunological variance between the Australian strain and the PMV strain by cerebral tests. The recent observations of Kessel²⁸ and his colleagues upon a California strain of 1935, established a closer immunological relation to convalescence in that epidemic than existed to the PMV strain, but their data are not entirely comparable, as reciprocal intracerebral tests were not made. It is certain from the above account that there are as widespread differences between poliomyelitis viruses as there are in the instances of equine encephalomyelitis^{29a} and encephalitis in man.^{29b} The therapeutic and epidemiologic implications of such findings are clear. Second, paralytic attacks occur in man, seemingly with the same incidence as first paralyzes.³⁰ It may be questioned if these are infections with a different virus. This does not necessarily have to be the case, as both Toomey and Brodie³¹ have shown second attacks to occur occasionally in monkey convalescents inoculated with the homologous virus. Extensive nerve cell involvement, as judged by extent of the initial paralysis, appears to determine to some extent these experimental cases of resistance to the homologous virus.

It follows from these findings that the epidemiological concepts relating to exposure as the factor determining spread of this disease,³² based as they are upon calculations from neutralization tests with a passage strain of virus, can not be considered as valid. It is likewise highly questionable if neutralizing substances in the blood

can be definitely related to observed immunity in this disease, as we²² have demonstrated their presence in man before paralysis has occurred. Likewise, resistance to both intracerebral and intranasal introduction of the virus in experimental animals is not determined solely by the presence of neutralizing antibodies (reviewed by Trask et al.²⁴ and Flexner³³).

Opportunity was afforded us³⁴ to test for the presence of neutralizing antibodies under actual epidemic conditions in an outbreak of poliomyelitis among infants in a Chicago institution. We obtained serum from forty occupants of a single hospital floor where three cases had just occurred. These results, tabulated by age groups, in infants that did not contract the disease are given in table 2. But 14 positive results were

TABLE 2. NEUTRALIZATION OF THE VIRUS (PMV STRAIN) BY SERUM OF INFANTS RESISTANT TO POLIOMYELITIS IN AN INSTITUTIONAL EPIDEMIC

Age groups (months)...	1-2	3-4	5-6	7-8	9-10	10-12	12-24
Number tested	7	12	3	4	4	0	8
Number neutralizing..	5	7	0	0	0	0	2

obtained from 38 children (37%). It is noteworthy that the largest number (86%) of all those neutralizing fell in the group less than five months of age, giving some indication when passive transfer is no longer evident. Tests on two of the three paralytic cases on the 4th and 6th days of paralysis, as well as upon the mothers of all three children, demonstrated the presence of neutralizing substances in all five samples of serums. While it is recognized that a higher percentage of neutralizations might have been obtained if the current virus had been utilized, such tests have been precluded because of the variable action of the 1936 Chicago virus (Table 1). Notwithstanding, these data (Table 2) show that factors other than blood neutralization of a passage strain of poliomyelitis virus are at work in halting an epidemic of this disease. It is probable that the most important is opportunity for contact with the infectious agent, as we hesitate to call upon "constitutional differences." The more study is directed at the classical tests for immunity, the less they appear to correspond to actual resistance. As an example, antitoxin level in the blood has now been found not to parallel either the Schick reaction or observed immunity to diphtheria in adults.³⁵

Prophylaxis of Poliomyelitis. A scientific basis for the use of serum in preventing poliomyelitis does not exist, as it has now been shown²² that neutralizing antibody in quantities beyond that producible by passive transfer is often present before and early in paralysis. Certainly, the practical results from the use of serum are not impressive.³⁶ The use of polyvalent antiviral serums and serum concentrates for this purpose has not yet been exploited, nor can we be certain that serum is of no value, as the numbers upon whom it has been used so far are not of statistical value. Under experimental conditions, serum has a definite but limited value,³⁷ protecting 30% of animals from nasal instillation of poliomyelitis virus as compared with 7% of controls that failed to become infected under similar conditions. Prophylactic value for other antiviral (rabies and vaccinia) serums has been even more definitely established.³⁸

A promising method of chemical blockage of infection has been worked out in the experimental laboratory, where the portal of entry of the virus has been made the nasopharynx. A variety of substances have been shown to prevent infection, under certain conditions: alum,^{39a} tannic acid,^{39b} picric acid, and other nitrophenols and mercuriochrome,^{39c} zinc sulphate,^{39d} and pituitrin and adrephine.^{39e} Of these, the most efficient appears to be picric acid, alum and zinc sulphate. When used on man in a field trial, very little evidence was obtained that infection was prevented.⁴⁹ Indeed, 25 cases were recorded as having occurred after application, but few less than in the control group. It is only fair to the method to state that another more rigorous trial is in order, as application of the prophylactic agent was apparently inadequate in some cases. An alternative explanation of this failure would infer that the preventive agent was not applied to the right portal of entry.

Wolf⁴¹ reported that he was able to prevent poliomyelitis by artificially increased temperatures applied during the incubation period of the disease. He did not use enough animals to rule out fluctuations in infectivity of the virus. These experiments have been repeated, using even higher temperatures.⁴² The results would not indicate any prophylactic effect of such an agent. Indeed, such expectations are ill-founded, as the thermal death point of the virus measured in blocks of spinal cord was found to be between

47.5 degrees and 52.5 degrees C. for the PMV. virus, depending upon the time of heating, and between 45 degrees and 47.5 degrees for the 1936 Chicago virus.^{41a}

Vitamin C given to monkeys in optional doses after cerebral infection appears to lessen the incidence of paralysis.⁴² The irregularities observed when slightly altered conditions obtain make it difficult to evaluate these experiments. The numerical incidence of success with this agent is about the same as with another virucidal agent: neutralizing serum. Vitamin D⁴⁴ apparently decreases resistance in monkeys to the virus when this latter is given by the intestinal tract. The application of vitamins to prevention of the human disease is not clear, as there is no evidence of vitamin D deficiency in the victims of poliomyelitis.

The Treatment of Acute Poliomyelitis. The efficacy of serums in the treatment of acute poliomyelitis is still not settled. The results of a large therapeutic experiment in New York and environs did not favor the application of serum in any stage of the disease.⁴⁵ Collection and analysis of the data from which these conclusions were drawn has been criticized in some quarters. Indeed, a full report upon the same epidemic stated that the case had not been fully drawn either for or against convalescent serum.⁴⁶ The variable course of this disease and the many complete recoveries from extensive initial paralysis that are made, even when no serum has been given, make an analysis of the results of serum treatment difficult. It is generally believed, at present, that the potential benefits of serum should be reserved for a certain group of patients in the acute disease: the pre-paralytic patients, those with bulbar poliomyelitis and those early in the pre-paralytic stage that still have an elevated temperature and signs of central nervous system irritation: changing reflexes, neck and spine rigidity and "toxic" symptoms.

An experimental attack has been made recently upon problems in the diagnosis and treatment of acute poliomyelitis. Tests for the integrity of the blood-central nervous system barrier by dyes have shown it to be intact in experimental poliomyelitis.⁴⁷ Some of these tests (e.g., fuchsin) are already standardized and can be used on man in the occasional difficulty that arises in the differentiation of tuberculous meningitis from pre-paralytic and non-paralytic poliomyelitis. Clin-

ical trials of these tests in instances of lymphocytic choriomeningitis are needed, as there was at least one epidemic, brought to attention recently,⁴⁸ where the identity of the disease was confused with non-paralytic poliomyelitis. An attempt has been made to follow the injection of different antibodies in monkeys in various stages of poliomyelitis.⁴⁹ Some of these (e.g., diphtheria antitoxin) were found to pass into the cord and into the cerebrospinal fluid. Similar tests upon the poliomyelitis virus neutralizing substances have not been completed. The vascularity of the spinal cord in this disease has been shown to be increased as compared to normal monkeys: by the method of vital staining (Faber)⁵⁰ and by India ink injection (Harmon, Smith, and Wasbotten⁵¹). In our experiments, the blood vessels of the anterior horns were four to eight times the size found in controls. In other experiments, titration for virus by dilution showed less in the spinal cords of animals that had received intravenous injections of convalescent serums. It thus appears that some of the virus in the poliomyelitic cord can be neutralized by serum given by the vascular route. We can see no basis for administering serum into the subarachnoid space in the disease of man.

While not proof positive of the beneficial effects of serum in human poliomyelitis, the results obtained in some recent epidemics where serum has been used should be quoted. Cowie and his colleagues⁵² reported no residual paralysis in 80 pre-paralytic cases treated with both human convalescent serum and transfusions from normal adults. The one acute paralytic case in this series rapidly cleared. They also reported symptomatic improvement in certain paralytic cases. Levinson⁵³ reported upon the treatment of 149 pre-paralytic cases that occurred in Chicago between 1931 and 1935. The incidence of paralysis was small and there was no residual paralysis. He was impressed by the symptomatic improvement shown by those receiving serum. He also reported⁵⁴ a mortality rate of 39% in bulbar cases alone (mortality in untreated cases, 75% to 90%) in the Chicago epidemic of 1936, where severe and fatal cases were encountered frequently. Only eight patients from 53 pre-paralytic cases in that epidemic became paralyzed after serum administration. The mortality was nil and only two have a slight residual paralysis. The results from serum treatment of other cases⁵⁵

in the Illinois epidemic of 1936 are given in Table 3. These give an apparent advantage to

TABLE 3. RESULTS OF THE ADMINISTRATION OF CONVALESCENT HUMAN SERUM IN THE ILLINOIS* EPIDEMIC OF 1936

	Paralyzed when First Seen			Not Paralyzed when First Seen		
	To-	No. Com-	plete Re-	To-	No. Com-	plete Re-
	No.	covery	%	No.	covery	%
Treated with serum...	126	28	22	63	56	90
Not treated with serum	113	11	10	31	9	29

*Exclusive of Chicago.

cases receiving serum. The most important point of all: an evaluation of the results of serum administration in comparable treated and untreated cases in terms of end-results of paralysis has never yet been made. The use of polyvalent serums which are indicated because of the difference in virus strains has yet to be attempted. Experimental evidence⁵⁶ that has been employed against serum should not be given too much weight, as the disease in monkeys is not comparable to the disease in man.

The importance of early and prolonged support of weak and paralyzed extremities and adequate orthopedic supervision must not be lost sight of in cases where there is only transient weakness, as these measures have easily demonstrable value.

SUMMARY

Some evidence has accumulated in a recent epidemic of poliomyelitis that points to the intestinal tract as the site of entry of the virus. Much of the data pertaining to the nasopharyngeal portal of entry has been obtained by animal experimentation and does not necessarily apply to the disease in man.

There are many factors that complicate the isolation of the poliomyelitis virus from man. Among these may be cited the necessary use of an experimental animal, the presence of virus neutralizing substances in the blood, nasopharynx and intestine and the existence of different virus strains.

There is no adequate preventive of the disease. The use of serum for this purpose is scientifically sound, but the practical value of such a measure has not been established. Chemical blockage of the nasopharyngeal area, while adequate in the laboratory, has likewise not been established for man. More study of both these agents and other methods is needed.

The best results in the treatment of the acute disease have been obtained by the combination of early diagnosis, massive doses of human convalescent serum and early prolonged and intelligent orthopedic supervision. Absolute rest, agents to dehydrate the nervous system and the respirator are aids in the bulbar type of the disease.

DISCUSSION

Dr. Henry N. Harkins (Chicago): I have just a few slides here to show some of the phases of the epidemic in the State of Illinois outside of Chicago during 1936.

The first slide shows the incidence in poliomyelitis as reported in Illinois from 1917 to 1936. You see the epidemic of 1916-17 and then the epidemic in 1936, and other epidemic years.

This shows the relation of the cases reported to the cases paralyzed in different years, 1931 up to 1936. Each of these years the cases paralyzed represented approximately 60% of the cases reported.

This shows in graphic form the number of patients treated in 1936 and the number of donors of convalescent serum for those patients.

This shows the number of patients treated with serum in 1936 in proportion to the number of cases reported. In other words, approximately half of the cases were treated with serum, while another half went untreated as far as serum is concerned.

This shows the results of the treatment in cases that were paralyzed when first seen and when treatment with convalescent serum was applied; of 126 cases treated with convalescent serum, complete recovery occurred in 22% and paralysis in 78%. Where convalescent serum was not administered, paralysis developed in 90% and complete recovery in only 10%.

This is quite different from the preceding slide and represents the cases which were not paralyzed when first seen. Of the 63 cases that were treated with convalescent serum, complete recovery resulted in 90%, the black figure being larger than the crippled figure, whereas in the preceding slide the black figure was much smaller than the crippled figure. In the cases not treated with convalescent serum, complete recovery resulted in only 29% and paralysis resulted in 71%.

An additional point based on a statistical basis, which is open to criticism because it relates to only a small number of cases. Of reported cases of poliomyelitis 150,000, in number, the rate per thousand is 1.1 cases, whereas in 17 second attacks in the same individual occurred in this series the rate is 11 cases per hundred thousand, or, in other words, about ten times as much as for the primary cases. So from this statistical evidence alone, those who say that second cases of poliomyelitis are less liable to occur are wrong, but it is to be realized that this is based on only a small number of cases and may be open to criticism.

This slide shows that convalescence can occur in poliomyelitis without neutralizing antibodies being present in the blood. In the summary of the serums tested

by various workers, of different poliomyelitis cases 42% did not show neutralizing substances in the blood.

In a series of 531 cases of poliomyelitis using the usual criteria for diagnosis of pre-or paralytic poliomyelitis, 360 of these or 71% never developed paralysis.

Dr. C. W. Jungeblut (New York, N. Y.): This paper of Dr. Harmon and his associates on poliomyelitis is of great interest, particularly as to the portal of entry of the virus. The experimental evidence has shifted back and forth from time to time favoring either the nasopharyngeal route of infection or the gastrointestinal, but there has never been complete proof or disproof. I think the very nature of the problem makes it impossible to make such a decision. It is true the isolation of the virus from rectal washings would seem to favor the potential significance of the intestinal portal of entry. At the same time, who is going to decide whether the virus does actually enter through the nasopharyngeal tract, is locally destroyed and then escapes through the intestinal tract? Those things, of course, make the decisions very difficult to make.

Dr. E. C. Rosenow (Rochester, Minn.): I am delighted to have heard Dr. Harmon's excellent presentation. My own studies of the virus of poliomyelitis agree with many of the interesting facts that he has reported.

I wish to emphasize particularly the great lack of evidence of contact infection, even during epidemics of poliomyelitis. In a study of the cases that occurred in the state of Kentucky a year ago last summer evidence of contact infection was absent in almost all.

We, too, have had difficulty in getting virus takes in monkeys, especially recently.

Poliomyelitis in the United States in the last three years has not been the typical Heine-Medin disease which it was previously. The mortality rate and incidence of paralysis generally is far less than it used to be. The disease affects older children and young adults much more commonly than formerly, and is associated with more pain and involvement of muscles than formerly, well illustrated in the Los Angeles epidemic of 1934.

The serum of persons convalescing from poliomyelitis and of monkeys convalescing from experimental poliomyelitis, in addition to having virucidal properties, contains demonstrable antibodies for the streptococcus which I have isolated consistently in poliomyelitis. Now that I have made filtrable, transmissible encephalitic and poliomyelitis viruses from streptococci, all requisites regarding the importance of the streptococcus and the virus of poliomyelitis have been fulfilled. This also makes explicable the curative action in poliomyelitis of the antistreptococcus serum prepared in horses with the streptococcus.

I wish to stress another point made by Dr. Harmon: i.e., that monkeys that have recovered from attacks of the 1936 poliomyelitis virus were found susceptible to standard virus. Flexner has recently recorded similar observations, namely, that monkeys that had recovered a long time before from virus poliomyelitis are not immune to recent inoculation of virus. It appears as if the virus and the streptococcus of poliomyelitis have

changed, just as has the disease in human beings. Interestingly, last summer I had the opportunity to see six cases of poliomyelitis. They resembled in clinical onset and incidence those of the epidemic of Los Angeles; all gave an immediate erythematous-edematous reaction surrounding intradermal injection of the immune serum prepared with the streptococcus isolated during the epidemic of Los Angeles, indicating infection by a streptococcus immunologically like the one with which the reacting antibodies were prepared.

Dr. Paul H. Harmon (Chicago, closing): I have very little else to say except about the application of chemicals to the supposed nasal portal of entry about which there has been a wave of enthusiasm during the last year. Practical results from these attempts have been disappointing since in last summer's trial in Alabama 25 cases of the disease occurred in those that had been so treated. Our experiments may afford some explanation of that fact. Perhaps the disease was, as probably in Chicago, an intestinal disease, so that the chemicals were being applied to the wrong portal of entry. Further experimentation will be necessary before that can be decided. Results with chemical blockade in prophylaxis on man has not been as effective as in the experimental laboratory.

The use of serum for prophylaxis in this disease is a question that has been under discussion for some time. There have been few reports that claim that serum has been of no value whatsoever. Only the report of the use of serum in Los Angeles in 1934 showed that there were more cases occurring in those protected by serum than in those not so protected. The differences in virus strains may make such results rational. I do not believe that the question of serum prophylaxis has been fully explored and that further work along this line should be done.

I might point out that the epidemic of last summer both in down-state Illinois and Chicago was more like some of the previous epidemics of this disease than we have seen for many years. The disease in untreated patients had a high mortality rate, nearly 20%. The average mortality rate you have seen already was lower because of the inclusion of treated patients. Levinson's results in the treatment of bulbar cases of poliomyelitis in that epidemic are quite instructive. The average mortality in bulbar poliomyelitis is about 75 or 80%. The cases treated by serum, which in addition had absolute rest and agents to dehydrate the nervous system, showed a mortality rate of only 39%. In the treatment of pre-paralytic cases in the years 1931 to 1935, in this latter author's hands as well as in the epidemic of 1936, the incidence of paralysis was negligible, although the number of cases so treated was about 150. Certainly if serum had no effect, one would expect a greater number of paralytic cases to occur in 150 cases than was actually the case, since as Dr. Harkins showed in the slides he demonstrated, there was at least 20 to 30% of paralytic cases observed in untreated cases diagnosed as pre-paralytic. We believe serum used in the pre-paralytic stage and in the paralytic stage when there is still a fever and in the presence of advancing paralysis, is of value in the treatment of this disease.

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A GENERAL CONSIDERATION OF THE TREATMENT OF CANCER OF THE BREAST

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The recent advances in irradiation therapy have apparently influenced to some extent the attitude toward the treatment of carcinoma of the breast. There is evidence to warrant the statement that some surgeons are now less radical in operations for breast cancer, feeling that adequate pre- and postoperative irradiation in conjunction with simple mastectomy or modified radical mastectomy will afford the patient as good a chance for "cure" as the extensive operation emphasized in the older literature. For example, one surgeon of note has said, "I should say that the best treatment for carcinoma of the breast in an operable stage would be, first to seek the advice of a first class radiologist and ask him to irradiate the breast by any means he thought best and tell me whether he considered it to be a highly sensitive tumor or one that was resistant. If he came to the conclusion that it was sensitive I certainly should not operate upon it at all but if it was resistant and apparently operable I should think that was a case for surgical interference." Another experienced surgeon has written that "in a small percentage of cases simple mastectomy is adequate treatment provided the entire breast gland is removed." Furthermore, it has been stated that if the axillary nodes are invaded, the possibilities of more extensive involvement are so great that cure can rarely be expected. Such statements confuse the issue and create the impression that carcinomas of the breast might, at the present stage of knowledge, be classified into groups, each of which has an optimum mode of treatment. We cannot subscribe to such views. To consider some of the points in question:

1. *Radiosensitivity.* In our opinion it is impossible to predict by any means known at present what is the radiosensitivity of a tumor prior to irradiation and prolonged follow-up. A complete macroscopic regression of the tumor does not mean that all of the cells are destroyed or

permanently devitalized. Thus how may clear cut indications for irradiation therapy alone be stated in advance in any given case? Histologic studies made in cases receiving pre-operative irradiation have indicated that the majority of breast carcinomas are according to present standards radioresistant.

2. *Size of tumor.* While in general small primary tumors may not have metastasized it is not possible to make such an assumption with any degree of assurance in a given case, because extensive metastases from small primary growths are not rarely encountered. Not infrequently no palpable nodes are present in the axilla on clinical examination, yet upon dissection of the specimen, or even during the operation, axillary metastases are discovered. Not only are the nodes themselves involved but microscopic examination reveals the presence of lymphatic vessels in the fat engorged with carcinoma cells. Thus, in the presence of a small tumor in any given case, how is it possible to be sure that the disease is localized to the breast and may be suitably treated by simple mastectomy or incomplete axillary dissection?

3. *The control of axillary metastases by irradiation.* Experience has shown that carcinomatous lymph node metastases are very difficult to control by irradiation. The tumor dose necessary to afford optimum opportunity for destruction of such metastatic lesions is approximately 4000r to 4500r. Even with such amounts of irradiation the large majority of breast cancers will prove to be resistant. Hence such attempts to arrest the process are uncertain and not frequently effective.

An operable carcinoma of the breast may be defined as one in which: 1. the primary growth is movable, upon the underlying muscles or ribs; 2. axillary metastases if present are moveable upon surrounding tissues; 3. spread in the cutaneous lymphatics, if present, might be grossly encompassed by the incisions. In such cases it is our opinion that the attitude should be uncompromisingly in favor of the radical operation regardless of how small the primary growth might be.

The technique of such an operation may be briefly described as follows:

1. Elliptical incisions extending from over the tendon of insertion of the pectoralis major on the humerus to below and medial to the breast over the insertion

of the rectus abdominus muscle on the anterior inferior chest wall. The elliptical portion of skin so demarcated includes the whole or major portion of the breast. The incisions vary in each case to permit the growth in the breast to be the center of the widest portion of the ellipse.

2. The pectoralis major fibers arising from the clavicle are separated from those of sternal origin by blunt dissection and the tendon of insertion of the latter on the humerus is cut near its termination. The coracoclavicular fascia exposed by retraction downward of the pectoralis major is incised near the tendon of insertion of the pectoralis minor in order to cut the latter. With both pectoral muscles retracted downward and inward freeing of the axillary contents is begun about the axillary vessels and nerves. This is performed by gauze and scissors dissection. Freed tissue is constantly retracted downward and medially. A definite layer of areolar tissue may often be stripped from the mesial axillary wall. Furthermore, the areolar tissue extending upward behind the axillary vessels and nerves must also be detached.

3. The operation is completed by severance of the pectoralis major and minor muscles from their costal origin, and detachment of the lower portion of the elliptically incised mass from the chest wall.

4. Closure after hemostasis, by interrupted silk sutures of the skin reinforced by several tension sutures. A drain is inserted into the axilla through a stab wound in the axillary floor.

Inability to completely close the wound because of extensive skin removal should cause no concern since the defect if not too large will heal spontaneously. If the defect is large skin grafting at the primary operation or later may be performed. It is the practice of some surgeons to remove such large portions of skin that complete closure is not done routinely and skin grafting is performed.

The failure of the radical operation to ultimately cure a majority of the cases of carcinoma of the breast is not due to the short-comings of this mode of local treatment, but due to the fact that the majority of patients are not first seen in early stages of the disease. Death results from metastases and the local eradication in such cases affords palliation in that large sloughing masses in the breast are avoided.

If the physician or surgeon does consider local and conservative measures for operable carcinoma of the breast in which irradiation is to play a major role or is to be the primary treatment the axiom credited to the French gynecologist, J. L. Faure, should be borne in mind, namely: "Many tumors are radioresistant, none are surgically resistant." A tumor widely re-

sected is definitely out of the organism providing the incisions were beyond the limits of the growth. On the other hand a tumor may be adequately irradiated according to our present knowledge and yet not be destroyed. Breast carcinomas, as stated above, are for the most part radioresistant.

In a review of the literature statistics may be cited to prove almost any point. Such conflicting conclusions probably indicate that a variety of factors obtaining in different groups render impossible an accurate comparison of one series of cases with those from another locality. From theoretical deductions and from practical experience we feel that irradiation is a valuable adjunct to surgery but its use should not lessen the degree of responsibility placed upon the surgical attack; the latter should be performed with the assumption that it is the only method of treatment to be employed.

In our clinic all patients operated upon for carcinoma of the breast receive postoperative irradiation. It is my personal view and practice at present, that the majority of cases should receive pre-operative irradiation as well, since under such treatment a neoplasm in the florid state is in many instances reduced in size and converted temporarily at least into a relatively quiescent growth. Under the latter condition wide resection might have a greater opportunity for success.

DISCUSSION ON PAPERS ON TUMORS OF THE BREAST BY DRS. MALCOLM, CASE AND BRUNSCHWIG

Dr. J. P. Simonds, Chicago: As a pathologist this discussion of the surgical and radiological treatment of cancer has been most interesting and enlightening. I think it is very significant that the attitude of physicians in general toward cancer, particularly cancer of the breast, has changed very materially in the last twenty-five to thirty years. Twenty-five or thirty years ago every pathologist and most surgeons looked upon breast carcinoma as an absolutely hopeless disease, and in the vast majority of cases it was hopeless. But the modern improvements in surgical technic and the use of radiation have made accessible carcinoma much less hopeless than it was before. I have seen some of the carcinomas which have been removed after Dr. Case had given pre-operative radiation, and the carcinoma tissues that are left are certainly sick looking. But I quite agree with Dr. Brunschwig that such tumors should be removed surgically as soon after pre-operative radiation as is justifiable in the opinion of the radiologist. One advantage of pre-operative radiation

is that there is probably less likelihood of implanting stray carcinoma cells in the wound.

With regard to radio-sensitivity, as Dr. Brunschwig and Dr. Case said, there are no accurate criteria by which that can be determined. I was fortunate to go to the Memorial Hospital in New York one Saturday morning when Dr. Ewing was going over the carcinomas for the week. I looked over them with him, an unusual and rare opportunity. I noted that in dictating the description and diagnosis he added the letters RR and RS. I asked one of the assistants what he meant and he said, radio-resistant and radio-sensitive. He was trying to formulate some sort of criteria by which he could determine the degree of radio-sensitivity and radio-resistance of a particular tumor.

I think most of the speakers have referred to metastases, many of which are too small to be detected until the whose mass has been fixed and hardened and then cut into very thin slices. Occasionally one will find on microscopic examination metastases in a lymph gland in the axilla that is invisible to the naked eye when one has split a very slightly enlarged gland with a knife.

There is one phase of this question of cancer of the breast and cancer in general that has not been referred to by any of the speakers and that I would like to mention. As every physician knows, there is a movement on foot now and has been for a number of years to educate the layman to go to a physician early in the course of carcinoma. Within the last six months an attempt was made to organize a Woman's Field Army to carry to the women of the state information concerning cancer, and to urge them to go to the doctor early in the course of the disease, because the earlier they go the greater the chance of eradication or destruction of the tumor. We cannot speak of the cure of cancer. We do not cure cancer like we cure malaria with quinine or diphtheria with antitoxin, we must either cut it out or destroy it with radiation. Many physicians may not approve of general lay education but whatever your opinion, I think it is perhaps going to go through, anyway. There are two phases that I would like to call your attention to, one is that the cancer patient will come into the hands of the physician sooner or later even though that patient has been under the care of a Christian Science practitioner, an osteopath, a chiropractor, and the physician has to take the responsibility of signing the death certificate if nothing else. If these patients are going to come to the physician anyway why not have them come at a time when there is hope that the physician can have an opportunity to do something for them? I think this publicity will be an advantage to the patient, to the physician and to the medical profession in general. If the profession in the state of Illinois can eradicate more cancers than they could in the past as a result of this publicity, then the medical profession as a whole will gain by this fact. The treatment of cancer is a highly specialized procedure and not every physician is equipped with the necessary skill or the necessary apparatus to treat cancer adequately. It is no reflection on the physician's ability, when he sends a tuber-

culous patient to the tuberculosis sanitarium for treatment. Why should it be any more of a reflection on his ability as a physician if, lacking the necessary skill and apparatus for adequate treatment of cancer, he sends the patient to a center, a hospital, or to a man who does have that skill and does have that experience and the necessary equipment? If that attitude is acquired by physicians there will be a lower death rate for cancer in the state of Illinois. You are familiar with the fact that on the request of the Cancer Committee of the Illinois State Medical Society a survey has been made of the death rate and morbidity of cancer, and the facilities for treatment of cancer in the state of Illinois. I hope that the members of the Illinois State Medical Society will get behind the recommendations made in this report and that within the next few years we may have a definite improvement in the cancer situation in this state.

Dr. James T. Case, Chicago (closing): I was just asked the question as to the relation of ovarian or pelvic disease to breast cancer. It is a well known fact that there is a definite relation between the pelvic organs, at least the ovaries, and cancer of the breast, and it is generally recognized in the larger cancer centers that when breast cancer occurs in women before the age of 35, it is justifiable to sterilize the patient by x-radiation or operation if preferred. I will not go into the whys and wherefores because it is not well understood, but it is recognized that there is a relation.

I am also asked if it is possible by radiation to kill all the cancer cells. I wish I could say yes but I am sorry I cannot. As Dr. Simonds said, radiotherapy renders the cancer cells rather sick looking. The majority of the cells may die out, but to hope to get them all is a very ambitious proposition, and I do not believe we yet have the means of accomplishing it by radium or x-rays.

I want to convey the impression that x-ray and radium are not proposed as a substitute for surgery but as an adjunct to it. I do not believe we have achieved results from x-ray alone at any stage of the disease. We should not reserve it for cases where it is too late to employ surgery, for in such advanced cases, we can only achieve palliation; but we should use the x-rays and/or radium in *all cases*, whether or not surgery is done. There are some in which other conditions prohibit surgery and in these, the x-ray is our only dependence. When surgery is possible, the radiation should be joined with it, preferably *before* the surgery, and then as a supplement to whatever degree the surgical findings indicate. In any event, the radiation should be applied as thoroughly as though no other means were possible. Then the surgery should be done just as though it was the sole means of treating the disease. Every case of cancer of the breast requires the course of x-ray or radium therapy, or both.

Dr. R. B. Malcolm, Chicago (closing): Most of the cases I referred to have been treated pre-operatively and all post-operatively by x-ray. I purposely kept away from etiology or from anything that would cause confusion. I would like to say now that since Dr.

Case has brought up the question of hormones, I would refer you to an article in the *Lancet*, page 877, by Sir Robert Muir. All these things did occur to me but my paper was on Surgical Pathology and I have tried to limit my discussion to this subject.

PROGRESSIVE MUSCULAR DYSTROPHY

Pseudohypertrophic Type

LOUIS BELINSON, M. D.

ELGIN, ILL.

Summary of Histories: Joseph K., aged nine years, and his brother, August K., aged twelve years, were committed to this institution in June, 1932. The reason for commitment as stated in the records was "That the mother had deserted the family and the father found himself unable to take care of the two boys." On admission they both rated in the imbecile classification, on psychometric examinations. The routine physical and neurological examination done at that time on both patients did not reveal any unusual findings beyond their mental deficiency. They have been in this institution for five years and three months, and with the changing personnel the exact onset of their present condition is difficult to determine. In an interview with their father, the fact is revealed that even before admission, August, the older, was having difficulty in getting about, while Joseph, the younger, was apparently normal in his physical ability. Mr. K. was unable to recall to his memory the incidence of any physical disability whatsoever in his family, comparable to that of his children. He added that most of the men had been soldiers when he was a youngster in Europe, and that he, himself, was with the American army in the World War, and fought against his brother, a German by adoption.

The third case is one just recently diagnosed; in a boy, Gerald E. E., born December 13, 1931, and admitted to this institution on January 4, 1936. The record states that he was second in order of birth of two boys in the family, and that he was an eight month baby delivered by forceps after a long and difficult labor. The older boy is said to be normal. No further information could be elicited from this family.

Physical and Neurological Characteristics: A sum-

mary of the pertinent physical and neurological findings in the case of August is as follows:

Gait: The typical "waddling" walk is very noticeable, associated with the so-called "steppage" movement. His body sways from side to side, feet wide apart, and he hyperflexes his legs in order to advance his feet, which are plantar-flexed and so avoids stumbling on his toes. With each advancing step his toes touch the ground first. He is unsteady particularly while standing quietly upright.

Arising from sitting position: He actually climbs up on himself in the manner so characteristic. From a sitting position he rolls over on to his hands and knees, then goes through the routine of extending one leg then the other, feet wide apart, placing both hands on his feet, then on his knees where he pauses. Now with all his efforts he extends his arms pushing on his knees, and extends his thighs simultaneously to swing the upper part of his body perpendicular to the floor. If successful, he will sway unsteadily for a moment, then "waddle" off.

Lordosis: He exhibits the characteristically marked lordosis.

Axio-appendicular Atrophy: There is a marked atrophy of the entire musculature of his shoulder and pelvic girdles. The latissimus dorsi and pectoralis major muscles, as well as the quadriceps and glutei are barely palpable. When attempting to lift him by placing the hands under his axilla, he is unable to make counter efforts and the acromion processes of both scapulae move up to the level of his ears, before his feet are lifted from the floor.

Scapulae: The scapulae are "winged," as is usually the case.

Musculature of Hands: The small muscles of his hands are not involved.

Musculature of Face: There is no detectable change in the appearance and action of the muscles of expression.

Sensation: As accurately as could be determined in a patient of this type, cutaneous sensations are normal.

Reflexes: All deep reflexes are absent. Of the superficial are present only the corneal and abdominal. The plantar reflexes are normal.

Symmetry: The condition is bilateral and symmetrical.

In the case of Joseph, the younger boy, there is a complete duplication of the findings as detailed concerning his brother, with the one important exception that the disease is not as far advanced. The difference then is one of degree entirely.

By comparison, Gerald, the third case, is just beginning to develop the findings. He is slightly ataxic and "waddles" when he walks. When arising he is able to thrust himself erect by pushing on the floor with his hands, and swinging his trunk up without stopping at his feet and then his knees for aid. There is slight lordosis, and at present no marked atrophy of his musculature. The deep reflexes are present.

They are all underweight in spite of special efforts to improve their feeding habits and food intake.

A report of three cases coincident with mental deficiency. Evaluation of "Prostigmin" in one case. Study made in Lincoln State School and Colony.

COMPARATIVE MEASUREMENTS			
Age	August 12	Joseph 9	Gerald 6
Weight	51 lbs.	44 ½ lbs.	34 ½ lbs.
Height	126 cm.	108 cm.	95 cm.
Circumference			
of Head	52 cm.	51.5 cm.	48.7 cm.
of Chest	63 cm.	56.5 cm.	53.7 cm.
of Abdomen	56 cm.	53.5 cm.	52 cm.
of Thigh	R. 27 ½ cm. L. 28 cm.	R. 30 cm. L. 31 cm.	R. 26 ½ cm. L. 28 cm.
of Calf	R. 27 cm. L. 28 cm.	R. 24 cm. L. 24 cm.	R. 19 ½ cm. L. 20 cm.
Length of			
Arm	R. 53 cm. L. 53 cm.	R. 43 cm. L. 44 cm.	R. 40 cm. L. 40 cm.
Leg	R. 63 cm. L. 64 ½ cm.	R. 53 cm. L. 54 cm.	R. 48 ¾ cm. L. 48 ¾ cm.

The above measurements have a definite significance in revealing both the atrophy and the characteristic pseudohypertrophy of these cases. The circumference measurement of Joseph's thigh, is about 3 cm. greater than his older brother's; indicating the degree of atrophy as found in the latter. Then August's thigh has the same circumference measurement as his calf muscles; pointing to the extent of the pseudohypertrophy. The unusual enlargement of the calf muscles in all three patients is evident on casual observation; most impressive of course on August, yet detectable on Gerald, the youngest of the three.

Discussion: The condition just described is one of the myopathies, and while not rare is fairly uncommon, particularly in cases which so parallel the typical clinical picture. Cases of this type were first considered in the literature in 1838.² The essential characteristic of the myopathies lies in the fact that the seat of the disorder is entirely in the muscles. In all true dystrophies the nervous system is entirely spared. This explains the absence of fibrillations and the reaction of degeneration in muscles objectively atrophied beyond use. There are several classifications in the literature and text-books of the myopathies⁷ and probably one of the best is outlined in an article by Bender,³ but there is no point to reproducing it at this time. As a result of a very interesting study involving the tracing of a family tree numbering about eighty people, Hough¹ concludes that progressive muscular dystrophy is inherited through clinically normal females, similar to hemophilia. With this approach he differentiates two large divisions or types, one dominant and the other recessive, as follows:

Facio-scapulo-humeral Type (Landouzy-Dejerine)—Dominant. This type, if the individual is incapacitated at all, lives well into maturity, and to prevent the transmission should avoid offsprings when they marry.

Pseudohypertrophic Type (Duchenne)—Recessive. In this type the individual is usually incapacitated be-

fore maturity is reached, and as a result transmission to offsprings does not occur.

With the above in mind, Mr. K., the father of August and Joseph, was interviewed and he revealed the fact that he is unable to hyperabduct both arms. He is a hard working laborer and first became aware of this when he joined the Army in 1917, and was ordered to raise both hands straight into the air above his head, and he couldn't. Examination failed to reveal any deformity and one is left to consider the possibility of an atrophy of his deltoid muscles, long since arrested. A very probable possibility in view of the conclusions arrived at by Hough.¹

The specific cause of this disease still remains a problem for the future. Every research worker, clinician and author interested in this phase has hypothesized some fairly logical, workable explanation. Consensus of opinion seems to indicate that the nature of the trouble lies in a metabolic disorder of the musculature involved. From 1921 when Loewi first discovered that a definite chemical entity was liberated at the motor end-plate of a stimulated muscle, through the researches of Dale (1928-36) who proved that the substance was acetylcholine, there has been increasing hope that the key to nerve-muscle physiology, both normal and abnormal, was at hand. Today with this truly brilliant example of research a proven fact, there is evidence of other undetermined factors, yet to be brought to light. A striking similarity to the problem of insulin in diabetes mellitus is present. Of course the therapeutic use of acetylcholine immediately suggests itself, but as a therapeutic agent its usefulness is greatly limited by its instability, susceptibility to rapid hydrolysis, and almost complete inactivation by certain esterases existing in the blood stream. It has then been postulated that the etiology of this disease points toward a too

rapid destruction in the body of the liberated acetylcholine.

Therapeutic Agents: With the clearing light of more positive etiological concepts, there have appeared attempts at therapy from the field of parasympathetic nerve study, glandular preparations and amino-acid replacement. Hough⁵ reports that in 1930, Kure and O'Kinaka first published the use of pilocarpine and epinephrine in progressive muscular dystrophy. He continued along this line giving daily .3 cc. doses of the

and repeats the administration of pilocarpine, as well as several other potential therapeutic agents. The use of amino-acids to cause a rise in creatine excretion, and thus spare the endogenous muscle proteins, was first reported by Brand, Harris, Sandberg, and Ringer, in the *American Journal of Physiology* in 1929. Thomas, Milhorat and Technor, in 1933, confirmed this work and added the administration of glycine in a dose of 7½ grams twice daily. Mettel reports that in his series the use of pilocarpine, phosphorous and

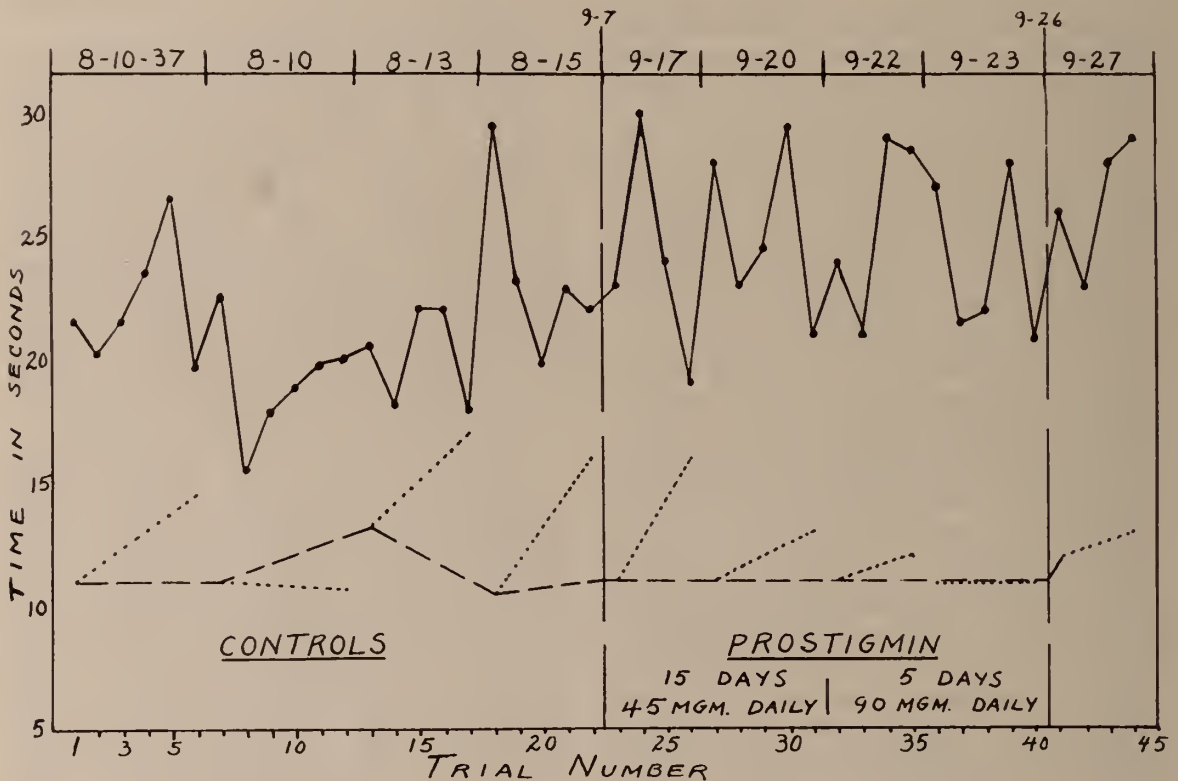


Fig. 1—Chart represents individual trials of performance routine plotted against time. Control trials average 21.2 seconds, while those under therapy, 24.9 seconds. Definitely no improvement in efficiency and evidence of loss of interest.

Lower graph denotes fatigue after walking 30 feet. The end of the dotted lines being the time at the completion of several manouvers. The time rose from 11 seconds upwards to 16 seconds.

following mixture: .1 cc. of a 1% pilocarpine, with .2 cc. of a 1-1000 epinephrine, and concluded the combination was effective in restoring muscular tone, and lessening the patient's disability. The drugs, however, must be administered continuously, because as soon as they are withheld a relapse occurs, and the condition returns to the state found previous to the therapy. Daily hypodermic medication is feasible only in a hospital or other institution. Mettel⁴ working with fourteen cases evaluates amino-acid therapy

ephedrine, as well as theelin, insulin and desiccated thyroid, all gave negative results. He concludes that glycine is of definite value in arresting the endogenous muscle protein destruction which occurs in these cases, by supplying extra amino-acid by mouth; but, glycine must be administered daily indefinitely, and the earlier in the course of the disease it is prescribed, the more effective it will be. After fibrosis has taken place in the muscle, therapy is useless; and it is believed that in the presence of glycine therapy,

fibrosis is never attained. A relapse will occur when the administration of glycine is terminated. There is probably another substance needed in the body with the glycine to influence and effect adequate storage of creatine in the muscles.

Effect of Prostigmin: Criteria and Study: It was with the understanding that a quantity of prostigmin, numbering five hundred, 15 milligram tablets, were to be made available that this study was begun. Unforeseen complications, however, arose and the drug supply could not be had. From another source, nevertheless, a small quantity was obtained, and the study was resumed. That prostigmin might be therapeutically effective in muscular dystrophy, is evident as a result of the noteworthy success of Walker, Pritchard, Hamill, Everts and others in treating myasthenia gravis, a myopathy, by both hypodermic and oral administration of this drug. In their consensus the specific action of prostigmin is closely associated with the liberation of the acetylcholine, at the myoneural junction. It may be inhibiting the too rapid destruction of the acetylcholine, or accelerating its formation, or preventing some allied substance from forming abnormally. In view of the limited amount of the drug, August was selected to receive the medication, principally because he was the most cooperative. With a twenty-day supply, he was put on 45 mg. daily, for fifteen days and 90 mg. daily for the remaining five days.

The criteria for evaluating the possible beneficial results, were twofold: one qualitative, involving an estimation of his muscle tone and strength, when lifting him under the axillae, and his reaction to commands and questions; the other, quantitative, measuring his efficiency by performance time, using a stop-watch, in walking 30 feet, and arising from a sitting position. He was timed from the instant both hands touched the floor, this proving to be a constant maneuver, to an erect position in balance. Originally it was planned to repeat the quantitative tests several times consecutively, at each session to establish a fatigue curve. This was abandoned because in spite of his unusual cooperation, he rapidly lost interest and would loaf. In addition to this it was observed that his muscular efforts were usually not slow, steady and forceful contractions, but depended largely on short, jerky contractions, aided materially by a rhythmic swaying and balancing of his body. This

explains a performance time of, for example, 25 seconds on his first trial; and 15 seconds on his third or fourth. The results, as performance time, were plotted on a graph.

Analysis of Graph: In total August was timed in his performance of the test maneuvers 44 times, of which 22 were used as a control. The arithmetical average for the control group calculated to 21.2 seconds, for rising from a sitting position, and varied from 29.6 seconds down to 15.6 seconds. By the same method, the average for the tests during and following the prostigmin routine, was found to be 24.9 seconds, and varied from 30 to 19 seconds. Of the nine performance checks on walking 30 feet, which averaged about 11 seconds, seven showed a definite fatigue, upwards to 16 seconds, when repeated immediately following several consecutive rising from sitting position maneuvers.

Conclusions:

1. Three very typical cases of progressive muscular dystrophy have been described, with particular reference to their characteristic findings and pseudohypertrophy of their calf muscles.

2. Etiologically, evidence points to its being a metabolic disorder of specific muscle groups, and transmitted to the males of succeeding generations through clinically normal females.

3. More specifically, the disordered metabolism, involves some peculiarity in the formation, utilization or destruction of the acetylcholine shown to be liberated at the myoneural junction of stimulated muscles.

4. No truly satisfactory therapeutic agent has thus far been discovered. Both the pilocarpine-epinephrine mixture and the administration of glycine seem to give definite results; namely a restoration of muscle tone, strength and efficiency, so long as the drug was given. Relapses invariably followed its discontinuance.

5. In view of the limited supply of "prostigmin" available, the results must necessarily point to an indefinite conclusion. Administration over a longer period of time, and perhaps in larger dosage, may disclose positive beneficial effects; however the results of twenty days' administration of "prostigmin" were definitely negative in one case of progressive pseudohypertrophic muscular dystrophy under observation.

October 6, 1937.

Note: The "prostigmin" used was made available by Hoffman-LaRoche, Inc.

PROSTIGMIN IN MUSCULAR DYSTROPHY INDIVIDUAL TIME CHART AND PERFORMANCE RECORD

Name: August

Date: September 20, 1937 Time of last Medication:

Time of Tests: 10 A. M. 9 A. M.

Timing: Walking 30 feet: 11 seconds

Reaction to Commands & Questions: moderately alert; no marked change

Estimation of Muscle Tone & Strength: no change in inability to make counter-efforts, during axillary lifting

Timing: Efficiency in arising from sitting position

Trial Number	Time of Start	Time of Finish	Performance Time
1	24 seconds
2	19 seconds
3	26 seconds
4	23 seconds
5	26 seconds
6	20 seconds

Timing: Walking 30 feet: 13 seconds

Addenda: becoming increasingly difficult to sustain interest of patient; will have to space trials further apart.
Belinson.

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EXOPHTHALMIC GOITER AND GASTRO- DUODENAL ULCER—TWO CONSTITU- TIONALLY DIFFERENT DISEASES

(With a Note on Pernicious Anemia)

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CHICAGO

For the past two decades or more the medical profession has watched these two diseases increase in frequency. Although a mass of extremely valuable data has been accumulated, which has contributed greatly to their understanding, their final solution continues to be baffling. Earlier in the study of these diseases an attempt was made to group them with the in-

fectious diseases. It was in that glorious epoch of medicine when one disease after another was solved by the searching eye of the microscope. It is hard to realize that in the brief span of about 50 years most of the infectious diseases have come under our control. In such a wave of enthusiastic success it was only natural that practically all diseases—even those found later to have been misplaced—should have been included in the infectious category. The pendulum swung so far to the extreme that we devised the ingenious theory of "focal infection" to take care of the less obvious and fulminating diseases—but supposedly none the less infectious ones. Into this subsidiary and slow smouldering category we dragged most of the chronic and degenerative diseases, including the two under discussion. Cannon says, "Since the turn of the Century an important change in the phenomena of disease has occurred—the seriousness of infection has been undergoing a remarkable decline and strains and stresses especially affecting the nervous system have been on the increase. . . The medical profession has not recognized in a practical way the recent shift in the etiology of disease."¹

Exophthalmic goiter* and to a lesser degree gastroduodenal ulcer† have fared better in this respect, probably because the presence of emotional disturbances that play an important role in both of these diseases is more easily discernible. Ivy³ says, "I have yet to meet a clinician of extensive experience who denies that sustained anxiety is a factor in determining the chronicity and recurrence of peptic ulcer in many cases." Morley⁴ says, "Emotional trauma is undoubtedly the commonest exciting cause in primary toxic goiter." Crile⁵ has focused attention on these two diseases as being the result of the stresses and strains of modern civilization. His contribution in this field has been notable and of great importance. Each succeeding year the literature gives evidence of the greater emphasis placed upon the role of emotions in these as well as other of the more common diseases.

But there is a danger of grouping together many of these diseases of emotional origin and

*Exophthalmic goiter, hyperthyroidism, thyrotoxicosis and Graves' disease are used synonymously in this paper.

†This term is used instead of "peptic" ulcer, since the latter is a misnomer. We refer throughout this paper to the chronic recurring ulcer, better termed "psychogenic ulcer."²

considering them as analogous in etiology and therapy. Already this has taken place and the two diseases under discussion have been singled out by some for such a purpose. Crile⁶ looks upon Graves' disease and gastroduodenal ulcer as belonging in the hyperkinetic group, both representing pathological physiology of the adrenal-sympathetic-nervous system. Hackfield⁷ interpreting the results of the Rorchach tests finds the psycho-biological structure of Graves' disease and gastroduodenal ulcer identical. "Fear states upset the physiology of the thyroid gland or keep the blood pressure at a high level for a long period on the basis of an excessive adrenalin secretion or in the case of gastric ulcer a prolonged hyperacidity." Trice⁸ speaks of

tion with hyperthyroidism. . ." He further quotes Robinson and Hargis as finding "a high incidence of the coexistence of these two diseases in their autopsy studies."

It is the thesis of this paper that the psycho-biological background of these two diseases is totally different. Data will be presented to show the contrast in body build, personality, sex incidence, symptoms, signs, and laboratory findings.

Body Build. First let us consider the physical build of both patients. The ulcer patient belongs to the long, thin type of individual. In a series of 72 patients studied, Draper¹⁰ found only the linear type represented. The author¹¹ studied 165 cases of ulcer build including height, weight, ponderal index, chest measure-

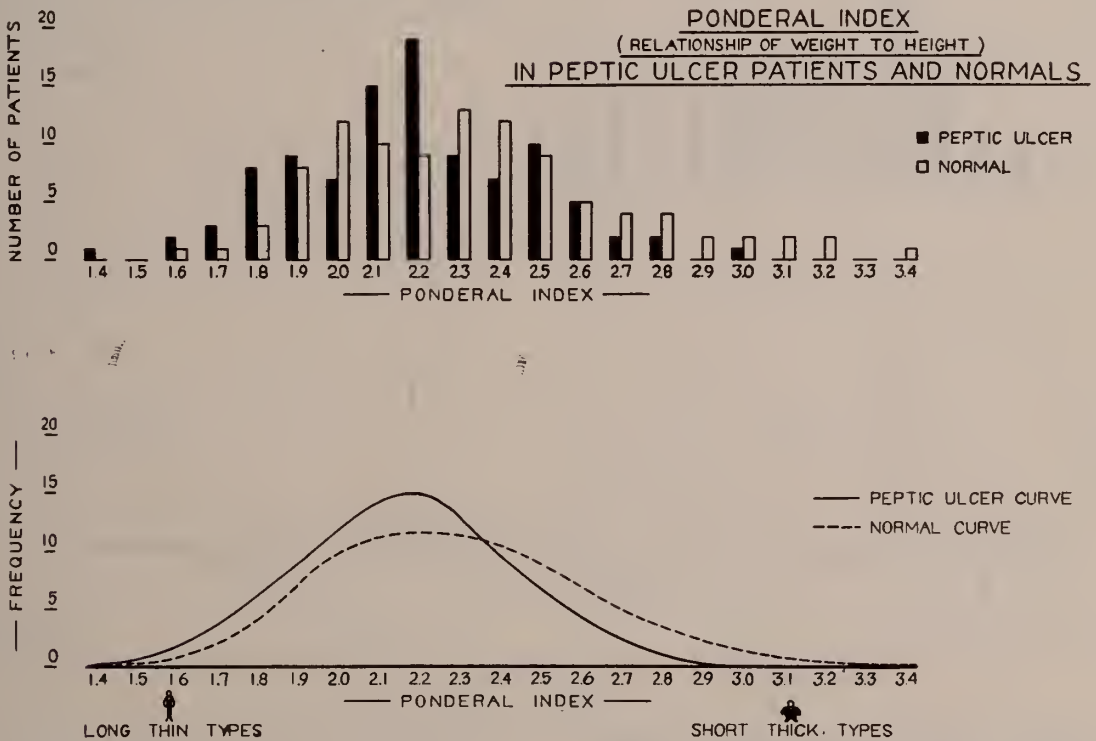


Fig. 1. Shows the body build of the ulcer patient in contrast to normal. The short stocky individual is generally immune to the disease.

a "close similarity of certain clinical features of peptic ulcer and hyperthyroidism . . . that there is some predisposing cause as yet unknown and to suspect the possibility of a common background of peptic ulcer and hyperthyroidism." Sexton⁹ states that "patients with hyperthyroidism very frequently have organic lesions of the upper digestive tract particularly peptic ulcer . . . while Crile has repeatedly called attention to the high incidence of peptic ulcer in associa-

ment and height-chest relationship, and the results were essentially the same. A chart of 100 of these patients is shown in Figure 1. Draper further found that the face is broader in its upper half tending to taper sharply to a pointed chin. The upper jaw is frequently somewhat narrow and the upper median incisors project over the two lateral incisors. The angle of the mandible tends towards the acute. The palpebral fissure is consistently wide.

There is very little in the literature about the anthropometric measurements of the patient with Graves' disease. Various writers have given their impressions of the hyperthyroid build and these are conflicting. Warthin¹² states that "the Graves' constitution individual presents a youthful build with a slender delicate and soft skeleton, slender waist . . . there is underweight rather than overweight." Lorand¹³ finds "no physical make-up that is characteristic of the disease for it occurs in every variety of build." The author compared the ponderal index of 100 hyperthyroid patients with 100 normals. These were all hospitalized patients, the great majority

ceptible and that a percentage of overweight that parallels the normal trend was found in the series. But on the underweight side we find a definite peak showing a preponderance of the slender build. It is, therefore, true that most hyperthyroid patients are of the long, thin type but the short, stocky type is not generally immune as is the case with the ulcer patient.

Personality. But even greater differences are to be noted in the two personalities, a study of which is extremely important in these two diseases because both are precipitated by emotional disturbances. It is through this common background that the error of parallelism has crept

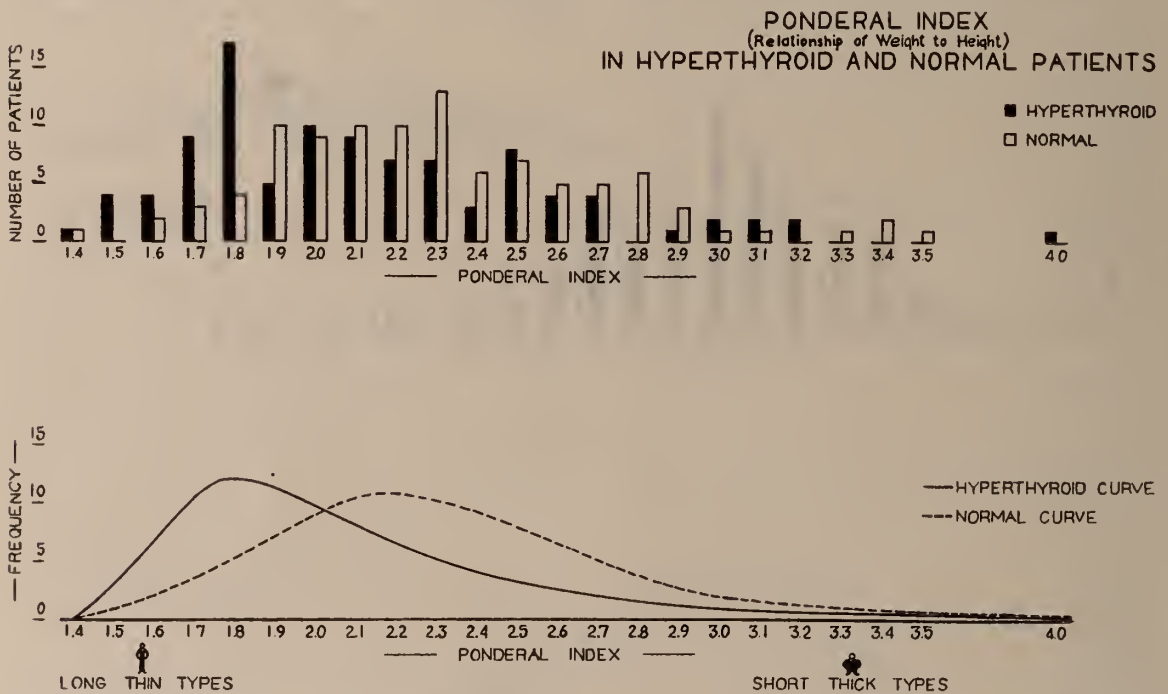


Fig. 2. Shows the body build of the Graves' disease patient in contrast to normal. Asthenic and sthenic Types are susceptible but there is a preponderance of the long thin type.

of whom had had a thyroidectomy. No adenomas were used in this series (although no sharp demarcation is recognized) nor toxic colloid goiters. Patients with the hyperthyroid state engrafted on an old chronic illness were not used. Only those patients who presented themselves with an obvious clinical picture of Graves' disease, with increased B.M.R. and whose pathological report showed diffuse hypertrophy and hyperplasia of the glandular thyroid tissue were selected. Figure 2 would seem to reconcile the two impressions about the build of Graves' disease. It is true that every type of build is sus-

in. It should be stressed, however, that it is not the emotional upset that distinguishes these diseases but rather the totally different inheritance of temperamental potentialities upon which these disturbances impinge that give rise to these two constitutionally dissimilar diseases.

The exophthalmic goiter patient is usually a weak dependent female. From her early childhood she has shown the need for sheltering and mothering. The parents tell us of her early sensitivity, emotional instability and great need for protection. This often leads to great attachment to the mother person. This uncertainty and

need for depending upon others continues to her adult years. She does not feel grown up, seeks the help of others and finds it difficult to face reality. She may be quite infantile in her behavior. She is fearful and anxious and lacks self confidence.

Let us compare these findings with the ulcer patient. He is a dominating male, who strives to be self sufficient and independent. He wants to solve his own problems rather than to rely upon the help of his family or friends. He often shuns well meant assistance at considerable sacrifice to his immediate problem or to his whole future and career, so extremely obstinate and set may he be. He receives favors grudgingly. He is often intolerant, combative and a fault finder, but he is over-conscientious regarding personal or professional responsibilities.

The Graves' patient is emotionally unstable, moody, and anxious, responding quickly to different stimuli—a picket fence reaction. The ulcer patient is externally cool, glum, distant, and often unresponsive. He minimizes his illness, seldom complains and dislikes attention. The Graves' syndrome patient tends to lose her temper quickly, to cry with ease, and to be demonstrative. She may present hysterical-like symptoms, or welcome her illness as a means of getting attention and sympathy. She lacks sexual interest, may be frigid or show arrested development on a homosexual level. Sometimes she speaks of her poor sexual adjustment and shows antagonism to men. The ulcer patient on the other hand is strongly heterosexual; in many the sexual craving is developed beyond normal. The goiter patient is concerned with her own illness and symptoms. Her introspection is related to the anxiety neurotic syndrome. The ulcer patient is more concerned with what goes on about him and his role in the community. He is interested in the passing show.

The neurosis is more deeply embedded in the ulcer patient than in the hyperthyroid and there is a stronger tendency to exacerbation of the disease. Complete and partial cures are more frequent in the hyperthyroid patient.

Two Mutually Exclusive Diseases. Exophthalmic goiter and gastroduodenal ulcer seldom occur in the same patient. If these diseases had much in common we should find them occurring together at least as frequently as their respective

incidence in the general population. This is not true. From a study of 553 patients with hyperthyroidism and gastroduodenal ulcer, only three concurrent cases were found. Out of 128 reviewed histories of ulcer patients that were hospitalized, not one was found to have hyperthyroidism or give a history of this disease. Metabolic readings were taken on two patients; one was minus 4, the other, plus 11. Out of 142 reviewed histories of exophthalmic goiter patients that were hospitalized, there appeared only four requests for complete gastrointestinal x-rays. In only one of these was a duodenal ulcer found. The roentgenologist's report on this female patient was "bulb fills with manipulation and appears persistently irregular although freely movable and tender." She gave a history of a digestive disturbance six years before which had been treated as an ulcer, without digestive symptoms since. The gall bladder visualization was normal and the heart was enlarged and decompensated. Probably this was a bona fide instance of both diseases occurring in the same individual (not simultaneously) although the history is not adequate and persistent "defective bulbs" do not make a diagnosis of ulcer in all cases as the surgical and autopsy tables will testify; nor does an "ulcer history" always mean a real ulcer syndrome. Here then is an incidence of .7% of ulcer occurring in hyperthyroid patients. The incidence in the average population is about 5%. In other words, 7 ulcer patients should have been found if only the normal incidence was expected. Combining this with 128 ulcer patients, there were 370 hospitalized patients suffering with either of these diseases and of them only one of the patients had both diseases. This makes .3% of concurrence in the hospitalized group.

In the ambulatory group only ulcer patients were studied—a total of 183. In only two patients or 1.1% could a diagnosis of hyperthyroidism be made. Interestingly enough both patients were female, which is to be expected in view of the female sex predominance in this disease. The clinical picture was typical of the disease but in neither instance was the follow-up successful in procuring a B.M.R. It might be argued that if routine B.M.R.'s were taken on all ulcer patients, a higher incidence of hyperthyroidism would be proven. On the other hand, it can be said that the literature would be more

replete with metabolic studies in the ulcer patient if the clinical picture gave the slightest suspicion of hyperthyroidism. The author was unable to find one such published study. We do find instances, however, of hypothyroidism in some of our ulcer patients. Carey¹⁴ in a study of 480 patients with hypothyroidism found 10 patients who had gastroduodenal ulcer. In our series of 183 ambulatory ulcer patients, 3 were hypothyroid. Emery and Monroe¹⁵ in a study of 556 ulcer patients found "no other disease occurred frequently enough in the past history to suggest an association with ulcer." Crile¹⁶ found in a study of 9,878 hyperthyroid patients, only 58 who had gastroduodenal ulcer—an incidence of .6% as compared with .7% in the author's series. His incidence is about one-ninth of the average incidence (5%). These diseases occur together so infrequently that it would be well to re-examine any reported instance of concurrence for possible error in diagnosis. The diagnosis of one of these diseases, therefore, would seem to preclude the presence of the other. This is particularly true of the male ulcer patient.

In our past teaching we have not emphasized sufficiently the value to be derived from the study of two antagonistic or contrasting diseases. Heretofore, we have rightly stressed the importance of concurrence in disease. *But of equal importance is the knowledge that certain diseases can seldom if ever exist side by side.* If there is something in the nature of one that precludes the existence of another in the same individual, we are justified in assigning different or opposite mechanisms in their respective etiologies. When two mutually exclusive diseases are found, our first question should be, what is the broad outline of the pathological process in one that is counter to the main process in the other? What are some of the lesser facets of one disease that function oppositely to the other? What are the vital differences in subsidiary categories, such as heredity, build, personality, sex, symptoms, signs, and laboratory findings? We must train ourselves to such observation because we must look upon mutually exclusive diseases as possessing inherent positive factors of antagonism, which of themselves may prove to be of great diagnostic value. Unfortunately our training has carried us to the opposite extreme as evidenced by the usual comment on two rarely con-

current diseases. One author who, after making a survey of the entire literature of the world and finding only 23 instances of concurrence of two diseases, proceeds to discuss all possible explanations for their *coexistence* (many seem fanciful) instead of striving to discover the *underlying differences that keep these diseases apart*, or searching the family histories for some atypical genetic principle operating in these few exceptional cases.

It is not a passive nor accidental circumstance that exophthalmic goiter and gastroduodenal ulcer rarely co-exist. Mere chance would throw them together as frequently as any other two diseases. There is a combination of psychobiological differences of sex and personality operating in the one that precludes the simultaneous existence of the other.

Further to illustrate the lesson to be learned from disease antagonism and to bring into bolder relief the differences between the two diseases under discussion, we should like at this time to present for consideration a third disease—pernicious anemia. (Fig. 3).

Pernicious anemia and gastroduodenal ulcer do not occur together. The author is still searching for one such authenticated case. This is most unusual in the whole realm of disease coincidence. The achylia in pernicious anemia is not the responsible factor for this unusual circumstance, since it has been shown that hydrochloric acid has nothing to do with ulcer etiology.^{17, 11} If this were the only factor keeping these two diseases apart, one would have to explain the lack of ulcer occurrence in the early decades of pernicious anemia patients (when the acid values are normal) since the age incidence of both diseases is different. It should be emphasized that the *presence* or *absence* of hydrochloric acid in either of these diseases is merely coincidental and unrelated to their etiologies, for it is contended that their respective pathological physiologies are at opposite poles.

In ulcer patients we find increased secretory activity of all types of cells in the gastric mucosa, while in pernicious anemia patients we find the total absence of this function. This complete secretory failure persists even after adequate liver therapy is administered and subjective and laboratory improvement follow.¹⁸ Most pernicious anemia patients show some psy-

choneurotic manifestations in addition to spinal cord lesions. The literature has reported these psychopathic patients since the disease was described as a clinical entity. Goldhamer¹⁹ in a recent study of 461 pernicious anemia patients found 64% with evidence of cerebral involve-

ment of this disease to be psychogenic* and regard the changes in the gastroduodenal mucosa with their effect on the bone marrow as secondary to degenerative lesions in the brain or stalk. Ulcer is looked upon as a disease occurring in a vagotonic individual in whom there is

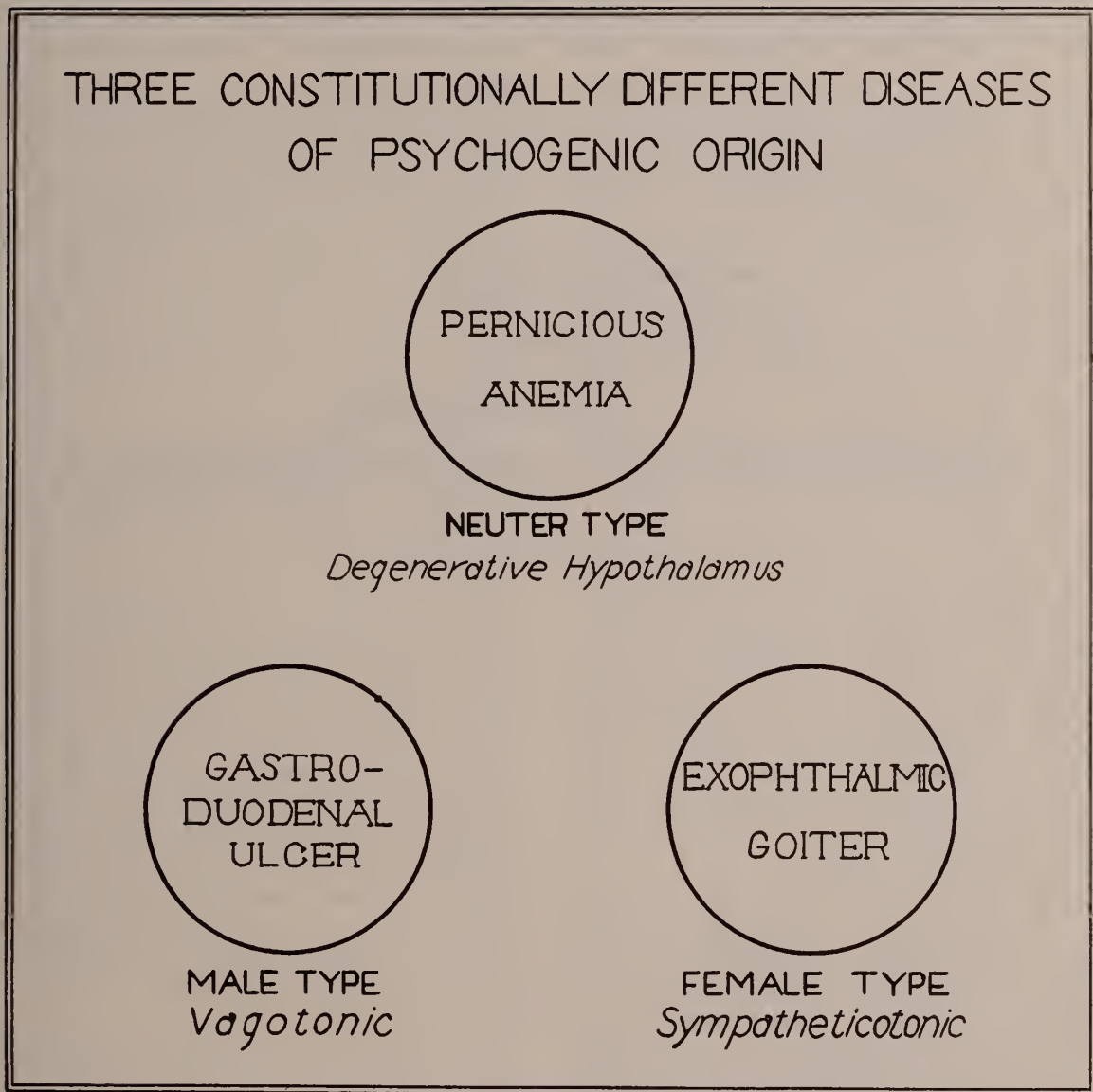


Fig. 3. These diseases do not occur together in the same individual. A diagnosis of one precludes the existence of either of the other two in over 99% of the cases.

ment including depression, irritability, memory disturbances, etc. The frequency of these mental changes has not been emphasized sufficiently in the literature. The psychologic component of pernicious anemia being ever present and universally confirmed, together with the well known cord changes, we might logically expect the eti-

enhanced stimulation of the secretory cells, musculature and vascular bed of the stomach and duodenum. We regard changes in these latter structures as secondary, arising from excitatory impulses in the vagal center in the diencephalon

*The term psychogenic is used in this paper to denote brain pathology.

which in turn may be motivated by the cerebrum. In pernicious anemia, might we not be dealing with a totally opposite pathological physiology, with degenerative changes in these same anatomical areas resulting in atrophy of the brain stem nuclei and other digestive centers responsible for normal gastroduodenal physiology? This theory is made more plausible if we bear in mind that most pernicious anemia patients do not show improvement of mental disturbances and fewer of cord lesions even after adequate anti-anemic therapy.¹⁹ There is no improvement in the achylia gastrica, nor is there evidence of gastritis at any time.¹⁸ From a consideration of the foregoing factors, we may conclude that pernicious anemia is a wide spread degenerative disease of the central nervous system (not of the oral alone) which cuts off the innervation to the gastroduodenum, depriving the organism of the bone marrow stimulating factor. Liver is merely a substitution therapy and does not affect, directly, the main degenerative process of the central nervous system.

Thus it is seen how mutually exclusive diseases may help in the elucidation of their respective etiologies. Knowing the pathological physiology of the ulcer patient and presupposing an opposite mechanism in pernicious anemia enables us to advance a theory of altered physiology which traces back step by step from the damaged gastric mucosa upward and is consistent with the established facts of the disease. Here we have two diseases with gastroduodenal dysfunction; the etiology of both is extra-gastric and residing in the brain.

In a slightly lesser degree, pernicious anemia stands in a similar relationship to hyperthyroidism. Both diseases are antagonistic and are seldom seen together. Andrus²⁰ reports only 23 cases in the literature in which the two diseases occurred in the same patient. He adds 5 of his own series. Schwanke²¹ concludes that these two diseases "show clinically the opposite picture . . . they cannot be shown to have anything in common . . . they are independent diseases and have no relationship."

Sex incidence. The contrasting sex incidence of gastroduodenal ulcer and hyperthyroidism is more interesting and revealing than the incidence of concurrence. It is a well known fact that about ten times as many males develop

ulcer as do females. And in the females who succumb to this disease a strong masculine component is generally found. In the case of exophthalmic goiter, the ratio of female to male susceptibility is eight to one, and of the few males who develop the disease, most clinicians recognize a leaning toward feminine traits. Here, then, are two diseases both of nervous origin at the extreme opposites in their sex incidence. Each sex harbors its particular disease, endows the individual member with its own psychic and somatic qualities even unto those scattered few of the opposite sex who fall prey to it. For after all, genetics has taught us that sex is more than differences in the genital systems and secondary sexual characteristics. Experimental evidence points to differences that are inherent in the psychobiological make-up of each sex with definite susceptibilities to certain diseases. How else can one explain the 40 to 1 ratio of male to female of the metabolic disease gout, or the sex incidence in such strongly hereditary diseases as hemophilia, color blindness, optic nerve atrophy, etc. The transmissibility of these diseases is dependent upon the determiners in the sex chromosome which in the human species is found in the female gamete only and explains these strange sex-linked traits. These diseases argue for protoplasmic differences of the whole organism. The same genetic principle may apply to other diseases with strong sex predominance and therefore suggests deeply rooted inherent constitutional differences of psyche or soma. Gastroduodenal ulcer is a masculine disease with a psychological constellation peculiar to the sex; hyperthyroidism is a disease of the female with distinctive feminine attributes. There are very few if any other common diseases that show such striking sexual preponderance. (See Fig. 4).

If we recognize protoplasmic differences in the two sexes, may we not find some clew to the etiology or mechanism in like diseases with the same sexual predominance—a common denominator as it were with root similarity? And contrariwise, might we not look for diverse etiological mechanisms in related diseases with opposite sex predominance. We would, for instance, find hysteria, a psychoneurotic disease with the same sex predominance as its sister disease, hyperthyroidism (also an anxiety state), and there-

a history of a complete ulcer syndrome, not even the patient with a history of an ulcer six years before. In Verbrycke's²⁴ series of 34 patients with "masked gastrointestinal hyperthyroidism," only one complained of hunger pain. Most of his patients complained of nausea and vomiting, gas, misery and ache in abdomen, and diarrhea. Lockwood²⁵ found most of the gastrointestinal symptoms referable to the colon—cecal stasis, irregular and spastic haustrations of the transverse colon. (See *Table I.*)

Physical and Laboratory Findings. The physical findings of both diseases are sharply contrasting. The hyperthyroid patient generally has a rapid pulse, increased blood pressure, skin that is warm and moist, a thyroid gland that is full or enlarged, staring eyes with large pupils, often with protruding eyeballs and lagging lids and wide palpebral margins, a tremor of the fingers and other parts of the skeletal system. These are all absent in the ulcer patient. His physical findings are usually negative except for localized tenderness in the upper abdomen.

The laboratory findings yield the most striking differences in these two diseases. First let us consider gastric acidity. Hyperacidity is the most constant laboratory finding in the psychogenic ulcer. It is so constant and persistent that many writers have claimed, and with good validity, that a diagnosis of ulcer should not be made in any patient with achlorhydria. What are the acidity values in Graves' disease? The subject has had wide and representative investigation in man and animal using Ewald and alcohol-histamine test meals, and in spontaneous and artificially induced hyperthyroidism. With an unusual unanimity the results show a definite lowering of acidity in Graves' disease. Moll and Flint²⁶ were among the first to emphasize the depressive influence of the sympathetic nerves and thyroid on the gastric acidity. Truesdell, Kunde and Hardt have shown that the feeding of thyroid in dogs lowers gastric acidity and in some animals achlorhydria was produced. In man, Lerman and Means²⁷ have shown a decided lowering of gastric acidity in exophthalmic goiter. These workers used alcohol-histamine technique and found 38% achlorhydria as compared with 13% in normals. Earlier, Barker, King and Lockwood demonstrated similar results. In 1933 Wilkinson²⁸ found "after thy-

roidectomy that the average free acid is raised to about the normal value for the entire series." In other words, thyrotoxicosis depresses gastric acidity, a mechanism directly opposite to that which functions in the ulcer patient.

In addition, the ulcer patient has a defect in his upper alimentary tract, and, if this is not present, there is induration and thrombosis in the affected region. These findings are absent in the hyperthyroid patient. Hypermotility is a constant finding in gastroduodenal ulcer while inhibited motility characterizes hyperthyroidism. The basal metabolic rate of the hyperthyroid patient is generally elevated; it is usually normal in the ulcer patient and may be below normal. Cholesterol values are lowered in Graves' disease but are not changed in the ulcer patients. Hyperglycemia and diabetes^{29, 30} are frequently associated with Graves' disease. This finding is not at all surprising when we consider that the sympathetic centers in the hypothalamus are adjoining that portion of the brain stalk where irritation can produce hyperglycemia and glycosuria.

Thymico-Lymphatic Constitution. "Graves' Constitution" (Warthin). The blood picture of the uncomplicated ulcer patient is normal with a tendency towards higher hemoglobin values and erythremia. The findings of the red cells in Graves' disease are rather conflicting. Schwanke²¹ claims that $\frac{3}{5}$ of his series showed an increase in the red cell count. Most American writers show normal values for the red blood cells and hemoglobin. There is more agreement, however, that in Graves' disease there is an absolute and relative lymphocytosis* with increased mononuclears and a tendency towards leukopenia associated with hyperplasia of the thymus gland. Warthin¹² was the first American writer to draw attention to these striking findings and their constitutional implications. Because in the total evidence of the inherited stigmata of this disease, this histological evidence is more objective and measurable than personality studies, we shall quote him at considerable length:

"To the writer's mind the most interesting and striking feature of the Graves' disease thyroid is the constant hyperplastic nodes with large germinal cen-

*In the author's series 21% had a lymphocyte count over 40, and 62% had a count over 35. There were two with a lymphocyte count of 60. In Schwanke's series 72% had a white count of 6,000 or under and 23% had a white count of 4,000 or under.

ters showing the characteristic lymphoid exhaustion of the thymico-lymphatic constitution. . . . It is apparent that the constitutional defect of the thymic-lymphatic (Graves') constitution underlies every case of exophthalmic goiter . . . which always shows hyperplasia of the primitive lymph nodes of the thyroid and hyperplasia of the thymus. . . . Graves' disease is a pathologic reaction potentially predetermined in the individual at birth by virtue of his constitutional anomaly. . . . Only those possessing this constitutional anomaly will ever develop the so-called hyperthyroid symptoms. The potentiality may, however, remain latent or quiescent during the whole or a large part of the potential's life. The clinical and pathologic stigmata of the Graves' disease constitution may, however, be easily recognized in this individual . . . in the thyroid of very young children."

Since the publication of Warthin's paper, Simpson, Hammar, Kemp, Szabados, Menkin, Margolis, Lewis, Moschowitz, Boyd, Fortune, Giordano, and many other writers, including Plummer and Marine, have confirmed his findings.

This finding is of extreme interest because it correlates a typical personality of an anxiety state with definite histopathological changes. Attention is drawn to this linkage not because there is any causal relationship but rather to point out that if a specific temperament is generally found associated with a specific constitutional anomaly, we may be sure to find in due time the specific histopathology of the emotion. Things equal to the same thing are equal to each other.

A recognition of the portent of the thymico-lymphatic constitution may serve of great value in preclinical medicine—a field greatly in need of bolstering. In any anxiety state a careful study of the white count is worth while. Excessive lymphocytes and mononuclears and a tendency towards leucopenia would make us suspect a patient as a potential candidate for thyrotoxicosis especially if the patient is female and there is evidence of excess lymphoid tissues such as juvenile tonsils—provided they had escaped the fury of the scalpel. (See Table I.)

DISCUSSION

Hyperthyroidism and gastroduodenal ulcer are shown to be two constitutional diseases of psychogenic origin. The word constitutional is here used to designate the sum total of inherited mental and physical characteristics that carry specific disease potentialities. No environmental factors can alter these potentialities that are present at birth. The ground work for ulcer and

Graves' disease is laid when the gametes fuse. External stimuli of postnatal life can only serve as the precipitating factors in the development of that disease, the potentiality for which a given individual's germ plasm has endowed him. He may be fortunate enough to live his normal span of life in a kindly environment and escape his latent disease, in which event the personality, symptoms, signs, and laboratory findings may reveal to the astute clinician the stigmata that each carries. But if the environment is not kindly as is more likely in our present highly competitive economic order—emotional conflict will cause stimulation of the respective divisions of the vegetative nervous system resulting in their characteristic psychic and somatic manifestations.

In gastroduodenal ulcer the genotypic evidence is to be found in the high familial incidence of the disease (as high as five patients in one family of parents and siblings), strong male predominance, susceptibility of the long, thin (asthenic) type, well defined and now fairly well agreed upon personality, unique site selectivity and pathology of ulceration.

In the case of Graves' disease, we find the following facts speaking for a genetic disease: high familial tendency and high incidence of emotionally sensitive unstable relatives, strong female preponderance, well defined personality, and thymicolymphatic constitution.

These disease are unique in that each represents one of the two divisions of the autonomic nervous system in extreme dysfunction. The ulcer is produced by hyperstimulation of the parasympathetic nervous system and Graves' disease by overstimulation of the sympathetic nervous system. While we recognize that undoubtedly there is overlapping in some of the patients with either disease, and further recognize that any nerve trunk of either division may carry excitatory and inhibitory impulses to the same structure, yet it is a fact that these two diseases manifest respectively the pathological physiology of each of the two vegetative nervous systems. Clinically, the symptoms of Graves' disease are the same as those produced by overstimulation of the sympathetic nervous system and the symptoms of ulcer are those of overstimulation of the parasympathetic (vagus). We stress the almost pure culture of respective discharge in these two diseases, with their associated strong sex pre-

ponderance and lack of concurrence, because there must be vital differences in their evolutionary and embryological origin. It is strange that these phylogenetically old vegetative nervous systems are so well separated in their hyperfunction in any two diseases, and this fact is of more

existence of a general parasympathetic center in the hypothalamus.

Crile, on the other hand, has advanced the hypothesis that a disturbed sympathetic nervous system is responsible for both diseases. He considers them hyperkinetic and brought about

TABLE I
TABULAR COMPARISON OF SALIENT FEATURES OF EXOPHTHALMIC GOITER AND GASTRODUODENAL ULCER

	Exophthalmic Goiter	Gastroduodenal Ulcer
Sex incidence	Female predominance 10 to 1	Male predominance 10 to 1
Body build	Any type susceptible. Lateral and linear	Long, thin type susceptible. Short and stocky individual escapes disease
Personality	<i>Fearful</i> , anxious, excitable, dependent, juvenile, frigid	<i>Worried</i> , externally calm inhibited stubborn, independent, heterosexual.
Appetite	Voracious	Capricious
Gastro-intestinal symptoms	Bizarre, symptoms of nausea, vomiting, diarrhea, etc.	Classic relationship to food
Reaction time of psychic trauma	Often sudden—shock like	More often long sustained
Eye symptoms	Exophthalmos; Graefe's, Stellwag's and Möbius' signs	Absent
Pulse	Rapid	Slow to normal
Blood pressure	High in most patients.	Low to normal
B.M.R.	High	Normal and may be low
Tremor	Present	Absent
White cells	Lymphocytosis	Normal
Gastric acidity	Lowered generally with achlorhydria	Increased values
Gastroduodenal motility	Atonia with dilatation	Hypertonicity with contraction
Cholesterol	Decreased	Normal
Histopathology of G.I. tract	Absent	Thrombosis, induration, ischemia, necrosis or ulceration of lesser curvature and duodenum
Histopathology of the thyroid and thymus	Hyperplasia and hypertrophy of thyroid with lymphatic infiltration. Hyperplasia of thymus	Absent
Autonomic division over-stimulated	Sympathetic	Parasympathetic
Nature of pathological physiology	Irreversible in full-bloomed disease	Reversible in most patients
Medical treatment	Unsuccessful in fully developed disease	Successful with adequate psychotherapy in most patients
Surgical treatment	Successful in most patients.	Palliative in many patients
Nature of neurosis	Superficial and often transient	More often permanent and deeply embedded

than an academic or pharmacologic interest. There is further confirmation of the foregoing hypothesis in the experimental work with the Horsley-Clarke stereotaxic instrument. Stimulation of discrete areas in the hypothalamus arouses the sympathetic system influencing the entire visceral activity but Ranson²¹ doubts the

through the same pathological physiology, namely, the sympathetic-adrenal-thyroid mechanism. He states that in the case of Graves' disease the adrenals act through the nervous system to stimulate the thyroid. In his article, "Hyperthyroidism and Peptic Ulcer—an Analogy"²², he explains how this mechanism produces

an ulcer. "Adrenalin inhibits oxidation in the gastrointestinal tract . . . decreasing gastric and duodenal motility and . . . alkalization of acid secretion. There will result a state of hyperacidity and diminished resistance to if not direct causation of ulcer formation." He recommends denervation of the adrenals for recurrent cases of both diseases.

In this paper we do not wish to discuss in detail the role of the mechanism proper in any of the psychogenic diseases and the alleged dominant part the adrenals play, but do wish to show that it is not applicable to the ulcer patient. Stimulation of the sympathetic nervous system produces flushing, perspiration, glaring anxious stare, excitability, increased pulse and raised blood pressure. These are all generally absent in the ulcer patient. Sympathetic overactivity may lead to hyperplasia and hypertrophy of the thyroid gland and increased B.M.R. The thyroid is not enlarged in the ulcer patient, nor is it overactive; nor is the B.M.R. elevated. As a matter of fact, the ulcer syndrome is not inconsistent with an *hypothyroid* state. Overstimulation of the sympathetic depresses total gastric secretion, lowers hydrochloric acid values, dilates the stomach and inhibits peristalsis. Overactivity of the thyroid also depresses secretory activity of the stomach. The very opposite occurs in practically every ulcer patient. Overstimulation of the sympathetic and thyroid leads to hyperplasia and hypertrophy of the thymus, lymphatic infiltration of the thyroid and further increases the lymphocytes in the peripheral blood thus producing the thymico-lymphatic constitution. No such histopathology is found in the ulcer patient. In other words, not one of the signs in the whole chain of altered physiology of the "sympathetic-adrenal-thyroid mechanism" is found in the ulcer patient. In addition to this there are the vital differences in the personality, sex incidence and laboratory findings in these two diseases as shown elsewhere in this paper.

From the foregoing it must seem clear that both diseases though psychogenic in nature are totally different in their pathological physiology. Any surgical procedure aimed to cure one could not affect the other. The following theory may be advanced to explain the mechanism of both diseases and the anxiety states.

In the ulcer patient we have external environ-

mental stimuli acting upon the cerebrum to cause stimulation of the parasympathetic centers in the diencephalon, or excitatory impulses may arise independently in this center. Impulses are carried direct by way of the vagus to the stomach and duodenum causing hypermotility and hypersecretion. Spasm of the blood vessels causes thrombosis and ischemia in those areas richest in vagal innervation, namely, the lesser curvature and duodenum. Ulceration may or may not follow. Two important factors in this disease may be noted. The discharge is direct from the brain to the gastrointestinal tract. There is no endocrine intermediary and the pathology is reversible in most instances even when it progresses to ulceration. A vacation of three days affording complete mental rest may begin the reversal of the pathology. This is as magical and specific a treatment as arsenic in syphilis, the only difference being that we can measure one accurately today but must wait until a tomorrow for the instrument with which to measure the other.

Graves' diseases and the allied anxiety states with a sympathetic component may be explained as follows. External stimuli produce excitatory impulses in the cerebrum and hypothalamus which are instantly diffused to the sympathetic nervous system. If this outflow produces only a few subjective symptoms and slight, if any, somatic representation, such as a mild tachycardia and slightly raised blood pressure, we then have a simple anxiety state. If it continued and involved the heart particularly, we would have neurocirculatory asthenia. Or the sympathetic outflow might follow a grooved pathway to the thyroid (probably by way of the pituitary), in which case the hyperthyroid state would be produced. The thyroxine would then alter the metabolism of all tissues, stimulate and inhibit other endocrines and further stimulate the sympathetic nervous system. The *original* sympathetic outflow may stimulate the adrenal medulla either directly or by way of the pituitary. Suprarenalin would then stimulate the sympathetic and probably the thyroid. But that the major stimulation of both the adrenal medulla and thyroid is central in origin may be inferred from a study of neurocirculatory asthenia, a sister disease to hyperthyroidism and which Crile calls its analogue. The personality in both diseases is

similar (they are both anxiety states) and their symptoms parallel each other sufficiently so that they are often confused in diagnosis. In neurocirculatory asthenia, however, the sympathetic outflow stops short of the thyroid gland. The increased pulse and blood pressure so common in this disease are due to direct stimulation of the heart and peripheral vascular bed by way of the sympathetic. The adrenal medulla also may be stimulated but its role in these somatic dysfunctions is problematical. If, as is claimed, stimulation of the adrenal medulla is the responsible factor in both diseases and adrenal denervation cures both neurocirculatory asthenia and hyperthyroidism, the proponents of this therapy must explain a gross inconsistency: why will suprarenalin stimulate the thyroid in one disease and not be able to do so in the other. For there is no thyroid dysfunction in neurocirculatory asthenia nor does a thyroidectomy afford any relief. Furthermore, these diseases do not occur together. To find practically no coincidence in diseases so similar must speak for some difference in their constitution and pathological physiology as stressed elsewhere. Exophthalmic goiter differs from neurocirculatory asthenia and the allied anxiety states as well as from psychogenic ulcer by having an endocrine gland interposed in the pathway of its stimulated autonomic nervous system which produces an irreversible pathology in the thyroid parenchyma.

In recent years much stress has been laid upon the important of early childhood experiences, sex inhibitions and typical conflict situations in the production of specific psychoneuroses. The thesis of this paper, which emphasizes the inherited psychobiological constitution as the chief etiological factor, strikes at the very root of these schools of psychiatry. The neuroses discussed herein offer striking illustrations of the way in which sex behavior for instance is predicated upon a neuro-endocrine basis. The ulcer patient has a strong sex urge because his functions are dominated by parasympathetic stimulation; the sacral division by way of the *nervi erigentes* stimulates the gonads. On the other hand, the thyrotoxic patient whom we have seen to be immature in her psychosexual development suffers from a disease which is characterized by stimulation of the sympathetic system which *inhibits the sex glands*. Without normal stimulation of these

glands, frigidity and sexual maladjustment would be expected. But it is not only in her sexual adjustment that her behavior is biologically conditioned but in her whole personality pattern.

The excess of lymphoid tissue of the hyperthyroid patient is characteristic of a juvenile state and lymphoid predominance in an adult is seen to be a biological arrest—much as homosexuality is in the field of psychosexual development. In the goiter patient there is a failure of the normal regression of lymphoid tissue in thymus, tonsils and peripheral blood. These laboratory findings are only the measurable stigma of a juvenile psyche and soma, the personality aspects of which include marked anxiety, excitability and dependence. May we not then conclude that these personality characteristics of the goiter patient reflect the constitution with which she was endowed rather than her early life experiences.

It is often said that not much is gained in proving a disease hereditary, and, accordingly, the minds of many medical men are conditioned against such a conclusion, forever striving to find any etiology other than a genetic one. Aside from the fact that truth and knowledge in any science must be followed scrupulously regardless of where they may lead us, we wish to point out that an hereditary etiology is not fatalistic in its portent. On the contrary, to the physician with vision a diagnosis of ulcer or thyrotoxicosis (with their implications) in the early decades of an individual's life may afford a golden opportunity for giving the patient some insight into his disease and offering the type of advice which will enable him intelligently to plan the social, vocational and marital aspects of his life. The result then may be the difference between a fairly well adjusted person in a suitable career and one who is chronically ill and unhappy—something of a liability to himself and others.

SUMMARY AND CONCLUSIONS

1. Exophthalmic goiter and gastroduodenal ulcer are shown to be two psychogenic diseases yet radically different in their psyche and soma.

2. The build of the ulcer patient is long and thin. The hyperthyroid patient may be of any build yet inclines to be slender and underweight.

3. The temperaments of the two types are contrasting. The goiter patient is fearful, ex-

citable, anxious, juvenile, dependent and frigid. The ulcer patient is worried, stubborn, inhibited, independent, conscientious, mature and heterosexual.

4. These two diseases seldom occur together in the same individual. The value to be derived from a study of mutually antagonistic diseases is discussed. Pernicious anemia is shown to be a third psychogenic and contrasting disease seldom occurring with either of the two under discussion. A theory of its etiology is advanced.

5. There is a strong sex predominance in each disease: ten males to one female have ulcers; ten females to one male have exophthalmic goiter. The importance of sex predominance in any disease is discussed.

6. The hyperthyroid patient complains of nervousness, excitability, irritability, and rapid pulse. The ulcer patient complains of his digestive upset.

7. The hyperthyroid patient has a rapid pulse, raised blood pressure, increased B.M.R., lowered blood cholesterol values. The ulcer patient has none of these.

8. The goiter patient has lowered HCl values tending toward achlorhydria, enlarged and atonic stomach. The findings in the ulcer patient are the direct opposite.

9. In the thyrotoxic patient we find hyperplasia and hypertrophy of the thymus, lymphocytic infiltration of the thyroid, relative and absolute lymphocytosis in the peripheral blood with tendency towards leucopenia. This thymico-lymphatic constitution indicative of a juvenile stage of development is absent in the ulcer patient.

10. The symptoms, signs and laboratory findings of exophthalmic goiter are practically identical with those produced by overstimulation of the sympathetic division of the autonomic nervous system. The findings of gastroduodenal ulcer are equivalent to those produced by overstimulation of the parasympathetic nervous system.

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SIMPLIFIED ANALGESIA IN UROLOGY

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The best type of analgesia for any particular surgical procedure varies with the procedure itself and with the individual patient. The chief considerations are: is the analgesia sufficient for the operation and is it safe for the patient? Another consideration further involves the degree of analgesia. In a great many cases anesthesia or analgesia used has been unnecessarily powerful for the operative procedure required. This obviously adds to the risk of depression to the patient. Manifestly, the analgesic state should be deep enough to allow the surgeon to carry on the operation, but on the other hand, full consideration should be given to the patient, and the aim should be to obtain a degree of analgesia which is sufficient but not dangerous. By adhering to these principles—trying to adapt the anesthetic or analgesic to the patient and the operation, using less when practical, we have found it possible to eliminate at least a part of the risk associated with our operative procedures, especially in cystoscopies.

In regard to analgesia for cystoscopies, the usual procedure which we followed until a few years ago, was to give the patient $\frac{1}{4}$ grain morphine sulphate hypodermically where vesical irritation was not a prominent symptom. In severe bladder irritability, nitrous oxide anesthesia was used. Also, there were some patients whom we decided would be ideal for caudal block and with these we used procaine to obtain a so-called "saddle" anesthesia. Both procedures necessitated the attendance of a skilled anesthetist and while with the former there is usually very little danger, the degree of analgesia is deeper than really required.

With the latter, the circulatory mechanism is depressed, the blood pressure reduced, and the tendency toward shock is increased. We have no quarrel with those workers who use such methods, but we have found these methods unnecessary in a large percentage of our cases.

From the reports by Alvarez,¹ Weum² and Stroud³ on dilaudid, we thought this opiate might offer possibilities as an analgesic in our field. In 1934 we began to give it in selected cases and obtained satisfactory results with it. For such conditions as renal colic, bladder spasm, etc.,

we found that $\frac{1}{20}$ grain satisfactorily took the place of $\frac{1}{4}$ grain morphine, relieved the pain and did not narcotize the patient as is the case with morphine. As time went on we extended the use of dilaudid to our surgical cases using it as we had used morphine, giving it an hour or so before the operation and following it by local or inhalation anesthetics. Then we tried giving dilaudid alone to some of our cases which we intended to cystoscope and found that it gave a satisfactory analgesic effect; however, a combination of dilaudid with scopolamine was even more satisfactory. There was adequate relief of pain in a shorter time than with morphine. Naseau occurred in but a few cases and so far the stimulation which we have noted at times with morphine has not occurred with dilaudid. In general, this combination of dilaudid and scopolamine with local anesthesia holds these patients so well that other anesthesia is not required and during the past year we have used nitrous oxide in only 4 patients. Caudal anesthesia has also been used in a few cases for transurethral resections, fulguration of bladder tumors and crushing of vesical calculi.

We give $\frac{1}{32}$ to $\frac{1}{20}$ grain dilaudid plus $\frac{1}{150}$ to $\frac{1}{100}$ grain scopolamine about $1\frac{1}{2}$ hours before the patient is taken to the operating room for cystoscopy. This dosage is based upon weight. A patient weighing 120 pounds or less is given $\frac{1}{32}$ grain dilaudid and $\frac{1}{150}$ grain scopolamine. Larger patients receive $\frac{1}{20}$ grain dilaudid and $\frac{1}{150}$ grain scopolamine if they are not irritable; when they appear to be very irritable, they are given $\frac{1}{100}$ grain scopolamine. By following the fore-going procedure the patients reach the operating room in a semi-conscious state and are able to withstand cystoscopies without apparent discomfort. A local anesthetic is instilled in the urethra—4% cocaine in female patients, 10% procaine in male patients.

Our results can be illustrated by the following case history:

G. K., a male patient, aged 24 years, had an intermittent, dull aching pain over the left quadratus muscle, referable to the left lumbar region for 4 weeks previous to entrance to the hospital. About 36 hours before he was brought in, the pain became continuous and was accompanied by severe chills. He entered the hospital for diagnosis one afternoon at 4 p. m. At 8:30 the following morning he was given $\frac{1}{20}$ grain dilaudid with $\frac{1}{150}$ grain scopolamine, returning

from cystoscopy at 11:15 with the diagnosis of left hydronephrosis. He rested comfortably following the cystoscopy, receiving no other opiates or analgesics and was discharged at 1 p. m. on the day following cystoscopy. The procedure outlined above was sufficient to do a satisfactory cystoscopy.

Where patients require a major surgical operation we prefer dilauidid to morphine. An injection of 1/20 grain dilauidid is given with 1/150 to 1/100 grain atropine about 45 minutes before the operation. Ordinarily this is followed by ethylene or nitrous oxide anesthesia, and occasionally spinal anesthesia is used. The following history illustrates our method of handling a prostatic case:

W. B., a male, aged 64 years, had complained of frequency, urgency and pain on urination for several years. He also had had a moderately productive cough for 4 years. He entered the hospital for diagnosis and surgery on the morning of January 10, 1936, and was given urotropin and sodium acid phosphate. Blood chemistry showed urea nitrogen 11.71, urea 25.03, dextrose 71.4. On the next morning he was given 1/32 grain dilauidid and 1/150 grain scopolamine previous to cystoscopy. Afterward, urotropin was continued and as his cough was rather troublesome he was given elixir terpin hydrate. Repeated examinations of the sputum failed to show any acid fast bacilli. On the morning of January 15, he was given 1/32 grain dilauidid. Three-quarters of an hour later a suprapubic prostatectomy was performed under spinal anesthesia. No opiate was required until 14 hours after the operation when the patient was given 1/32 grain dilauidid, after which he slept for several hours. The pulse remained around 106, later falling to 86. Respirations ranged between 20 and 25. There was some bleeding from the bladder on the first post-operative day, but no opiate was required. Urotropin was continued and as the cough had begun again, he was given elixir terpin hydrate with codeine about every 5 hours until the 8th post-operative day. He was discharged without complaint on the 10th post-operative day.

The following report illustrates our method of handling nephrectomy:

Mrs. F. L., female, aged 50 years, had complained of pain in the right lumbar region for over 3 years; difficult and burning urination for one year; and had noticed blood in the urine for a few days previous to her entrance into the hospital. At the time she entered, the pain in the right kidney region was especially severe and cystoscopy under local anesthesia was performed. About two hours later she was given 1/20 grain dilauidid. She became slightly nauseated about 4 hours later. Guinea pigs were inoculated with urine from both kidneys with negative findings. Twenty-five days after the cystoscopy a right nephrectomy was performed. The pathological diagnosis was nephrolithiasis and chronic pyelitis. Previous to the operation, 1/20 grain dilauidid and 1/150 grain atropine were given. One hour after the operation, her pulse was regular

at 100 beats a minute and respirations were 22. She was given dilauidid 1/20 grain on her return from the operating room at 9 a. m. and again at 12:30. Codeine 1 grain, given at 1:30, apparently had little effect and dilauidid was repeated. Her pulse remained regular—around 90—and the respirations at 24. No more opiates were required during the post-operative period. She made a good recovery and was discharged without complaint on the 10th post-operative day.

Our observations corroborate those of Brown and Kleine,⁴ Moench⁵ and others who find that there is less necessity for postoperative catheterization when dilauidid is used, and that it is a satisfactory opiate for pre- and post-operative use.

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In these urologic procedures the addictive property of an opiate is not important, but it must be considered when it is necessary to give the drug for any extended period of time. We have read Stroud's³ opinion of dilauidid in this respect and can report that the patients we had on dilauidid for several weeks apparently had no desire to continue the drug when we stopped its administration. Dilauidid was not given in large enough doses, nor long enough to determine the degree of its addictive property, but in similar cases receiving morphine, we have occasionally encountered difficulty when the drug was withdrawn.

In summarizing our methods of analgesia in urology, we can say that:

1. Adequate analgesia for cystoscopies is often obtained by using morphine, grain 1/6 to 1/4, or dilauidid, grain 1/32 to 1/20 with scopolamine grain 1/150 to 1/100, depending on the weight and irritability of the patient. If such a procedure is used the risk of depression is not as great as when inhalation or spinal anesthesia are used.

2. Dilauidid has proved to be a more satisfactory opiate than morphine for the relief of pain in cystoscopies or other surgical cases, in renal colic, tumors, etc., since there is practically

no nausea or other evidence of stimulation accompanying its use, and there is less necessity for post-operative catheterization.

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THE OCULIST AND REFRACTION

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Sometime ago I chanced to read an article in an optometrist publication in which the statement was made that optometrists were now doing better than 60% of all refractions, and the prediction was made that this percentage was rapidly increasing at the expense of the oculists. In the same article drug and department stores were given credit for 10% refractions. If this be true, then we oculists are doing less than 30%.

To most of us, particularly in the smaller cities, refractions constitute a major source of our income, and it occurred to me that a paper on this subject might awaken us to better efforts in this very important part of our specialty.

Eye work and refraction are about all that we have left of our specialty that is not being, to a great extent, taken over by the general practitioner and surgeon. Since the recent depression I doubt if there is a community in which less than 90% of the physicians and surgeons are not doing all their own tonsillectomies, treating all throat and most of their acute nasal conditions, referring to us only when complications arise. Thus, with the optometrists fighting for our refraction work and the general men, particularly the younger ones, taking over a goodly portion of our nose and throat work, it begins to look as if we are up against a grave economic problem.

Now just what can we eye, ear, nose and throat men do to combat this state of affairs? As to the position of the general men and ear, nose, and

throat work, we can do very little except to hope that, as their practice and income increase, they will again feel that they can refer the head cases to us.

As to our eye work, the major portion of which is refraction, we are not competing with medical men and, therefore, should feel free to put up a fight for it. Here we are competing with the optometrist with his elaborately equipped offices, expensive refracting gadgets, flagrant advertising, and super salesmanship. But consider this;—the optometrist of today is not the optometrist of 10 or 15 years ago and we can no longer ignore them simply as spectacle fitters. Fifteen years ago there were no state optometry laws and not much in the way of educational requirements and anyone who wished to take up the fitting of glasses, whether he was a jeweler or a laborer, simply put up his sign, paid yearly dues, and advertised himself as an optometrist. Today we are competing, in many cases, with men properly trained in refraction work and working on a sound scientific basis. This has been brought about by adequate state legislation and the establishing of graded optometric courses by colleges like Cornell, California, Rochester and other recognized universities throughout the country. Admitting that many of them are better trained than heretofore, we oculists still have a sound claim to superiority—surely we have had adequate training and know, or should know, as much as they about the principles and mechanics of refraction and, in addition, we have what they do not have—a knowledge of the anatomy, physiology and pathology of the eye. The problem, then, is to do better work than they and let the public know of it.

As members of the medical profession, we cannot ethically use advertising but in some manner we should find a way to let the public know the difference between an oculist, or eye physician, and an optometrist. Two well known Chicago optical houses have done some newspaper advertising along this line, but I understand that some of the leading oculists have taken them to task for it. Personally, I do not believe that deliberate newspaper publicity is the right thing. It will simply stir up the optometrist and give him a target to shoot at.

There are a number of factors other than ability contributing to the present day popularity of the optometrist. Ranking first among them is

the reluctance of a very great number of people to submit to the use of cycloplegics, generally for the reason that it handicaps them for a period of 24 to 48 hours. The optometrist has played up this matter from all angles and has attempted to educate the people against them by implying that they are not only unnecessary in every case but that they permanently injure the eyes and affect the vision. As a result of this vicious propaganda many people hesitate to visit an oculist because they are led to believe that we fit glasses only by using the dread drops.

Another thing contributing to their success is the modern, elaborately equipped offices which most of them maintain. This appeals to the public, and many of us could profit by their example. In the past, and to too great an extent even in the present, we oculists have been content to do our refractions in one corner of our consulting room, equipped with meager refracting necessities, a trial case, a cheap Snellins card, and a bottle of atropine or homatropine. Isn't it about time for us to wake up to the fact that this can no longer be? The public is demanding modern equipment in all lines of business, and the eye, ear, nose and throat man's office is no exception. Now, I am not advocating that we buy all the expensive, elaborate equipment offered us by the various optical supply houses, but let's dress up. We must have separate, well-appointed refracting rooms with certain necessary modern equipment, and then, let's give more attention to refraction—do it in a thorough, properly systematized manner, and equip ourselves with the best of the modern scientific apparatus for the complete analysis and correction of refractive errors.

In the short time allotted me I cannot go into detail as to what I consider necessary in making a complete refraction so I will limit my discussion to the value and use of the retinoscope in static retinoscopy. I have been doing refractions for a period of 21 years and for the past 18 years have made it an ironclad rule to begin every refraction with a thorough, painstaking retinoscopy, thus obtaining a definite starting point, without which, subjective testing becomes guesswork and not scientific measurement of refractive errors. Its importance cannot be overestimated. It is, in my opinion, the most accurate objective method for the determination of ametropia and the examiner who does not use it in every case

deprives himself and his patient of the most reliable test at his command. What a source of satisfaction to be able to match one's own objective findings with the later subjective findings obtained at the trial case!

Retinoscopy was first described by a French physician, Cuignet, in 1873. He never understood just what it was but he thought the phenomenon was due to the cornea. Several years later Landolt took up the work and was among the first to investigate and describe its theoretical basis.

Now just what is retinoscopy or skiascopy? It is simply the determination of refraction by observing the movement of light across the pupil and depends upon finding the point of reversal or the myopic far point of an eye. Fortunately, it can be mastered without any reference to the physical theories involved and, for this reason, I will not attempt any detailed explanation or mathematical drawings. Suffice to say that the fundus reflex which we see is the light from the retinoscope reflected back into the observer's eye from the fundus of the patient's eye and is known as the fundus reflex. The brightness of this reflex varies, depending upon four factors:

1. The amount of pigment in the eye—the more pigment, the less light reflected. This is of little importance as it can be overcome by using a stronger light.

2. The amount of refractive error. In high errors the reflex is dull and appears to move slowly; in low errors it is brighter and moves more rapidly.

3. The size of the pupil. In a dilated pupil more light is reflected.

4. The distance of the light source. The nearer it is to the patient's eye, the more light enters and the brighter the reflex. For this reason I think the 26-inch working distance the best.

In so many of the articles on retinoscopy the writers seem to speak only of the shadow. This, I think, is misleading especially for a beginner, for there is also a light movement as well as a shadow, and this light movement in my opinion is the real movement to be watched. This movement or reflex is the first to be seen in the mid position of the pupil, the shadow only appearing when the light is passed entirely across. Merely rotating the mirror enough to bring out the light crescent in the edge of the pupil is sufficient to define its with or against character.

Retinoscopy may be performed with either a plane or concave mirror, the reflex and shadow being just the reverse with a concave mirror. I have tried both at various times and found long ago that if I got into trouble, it was always with the concave mirror, so I have discarded it entirely. No piece of optical equipment, however elaborate of design or scientific in construction, equals the little inexpensive self-illuminated retinoscope with plane mirror. With a little experience and proper use in a moderately darkened room, one can ascertain in a moment just what type of error you are dealing with—and what a time saver it is!

There are two principal subdivisions—static and dynamic. The former is a method while the eyes are in a state of muscular inactivity, and the latter, when they are in a state of muscular activity.

In static retinoscopy we attempt to determine the position of the natural or artificial far point of the eye by the use of lenses. Physio-logically this is the point for which the retina is in focus without accommodative effort. There are two generally used methods of static retinoscopy known as stabile and mobile. Stabile is when the examiner works at a fixed distance and uses lenses to bring the neutral point to his distance. Mobile is when the examiner moves back and forth until he reaches the neutral point; then, from the distance of this point from the patient he determines the errors of refraction. Personally, I prefer, and have always performed, my retinoscopies at a fixed distance, using a working lens representing the distance.

The two greatest handicaps to a successful retinoscopy are accommodation and obliquity. Accommodation must be suppressed either by a cycloplegic such as atropine or homatropine or by some method of fixation at optical infinity. Obliquity must be avoided by control of the fixing eye so that the rays from the retinoscope entering and emerging from the eye under examination are along the axial line and originate very close to the macular area. Obliquity introduces anywhere from a quarter to one dioptré of false astigmatism in addition to various disturbing aberrations. In a thoroughly atropinized eye it is easily and entirely avoided by having the patient look directly at the peep hole in the retinoscope mirror, but, when no cycloplegic is used, looking at the light in the retinoscope will immediately

produce accommodation, a contracted pupil, and defeat the purposes of static retinoscopy.

For the reasons just stated all authorities agree that retinoscopy is most valuable when performed under complete cycloplegia with one eye blinded and the eye under examination fixing the mirror so that true axial or para-axial refraction is accomplished. In this I agree but am convinced that drug cycloplegia is not an indispensable requirement for the average run of refractions. One cannot, nor does he wish to, dilate every patient presenting himself for refraction. As stated previously, I believe that a great majority of the optometrists' patients go to them for this one reason—the fact that they do not use drug cycloplegia. It is impossible to estimate just how many patients we oculists lose to the optometrists because of the general belief that we use only drug cycloplegia for our refractions. Understand that I am not condemning their use as I know as well as any of you that drug cycloplegia is absolutely indispensable in many cases, but I do think it is resorted to in numerous cases where, with a painstaking retinoscopy, it could be avoided and the patient saved the period of inconvenience. I have relied upon it for the past 20 years and each year I use less and less homatropine in adults and get results satisfactory to myself and patient.

However, without cycloplegia certain details of technic must be rigidly observed. These have to do with an attempt to relax accommodation and convergence and with the avoidance of obliquity. The usual method has been to instruct the patient to look at some object behind the examiner. Looking at an object 20 feet or more from the patient—the so-called optical infinity—does relax the accommodation but, as it is usually performed by the patient, it is very crude and results in the examiner working obliquely to the patient's visual line and, therefore, his observation line is oblique to the fixation line. Obliquity of observation, especially when too marked, interferes decidedly with an accurate retinoscopy and is probably the reason why so many otherwise good refractionists do not get results and gradually neglect the procedure. The smaller the amount of obliquity, the less aberration and by keeping it at a minimum, with a little experience one can avoid its pitfalls.

Merely telling the patient to look off at a distance over the examiner's shoulder or past his

head is much too indefinite. Some very definite fixation spot must be provided; it must be at, or beyond, optical infinity (6 M.) in order to secure accommodative relaxation and so arranged that the examiner is not working too obliquely to the patient's visual line. If you will arrange for this proper fixation to begin with, many of your pitfalls in retinoscopy will be avoided. Probably none of us attempt to perform a retinoscopy, without the use of a cycloplegic, unless we first instruct the patient to focus his eyes on some distant point, but in too many cases we do not impress the point strongly enough and the patient, therefore, does not concentrate and allows his eyes to wander, thus confusing the examiner and leading to false findings.

There is on the market now a device called the Pascal Photoscope or Photostat which solves to a great extent the difficulty of fixation. It consists of a tube in which is a light and filter, perforated diaphragm, and a mirror so arranged that it can be used from 15 to 20 inches directly in front of the fixing eye—between him and the examiner. In looking into this fixation target the patient gets the distance effect of 15 or 20 ft.—optical infinity—and there is relaxation of accommodation and convergence. However, except in certain cases which I shall mention later, even this instrument is not necessary if you will observe certain details directed towards relaxation of accommodation and proper fixation at 20 or more feet.

The method which I have used routinely for the past 18 years is as follows:

The patient should be in a comfortable refracting chair with rigid head rest and the phoropter or trial frame in accurate position and the room moderately darkened. Plus lenses of sufficient strength to produce a distinct fogging are now inserted before each eye. The examiner seats himself exactly in front of the patient so that his head obstructs the patient's view of the test chart and at a distance of 26 inches from his eyes. I prefer the short distance, first, because the reflex is brighter and, second, because it is easier to reach and make necessary lens changes.

The small muscle testing spotlight on your chart is now turned on. You are between the patient and this point of light. Next, very slowly move yourself to the left until the patient can just see the point of light with his left eye; your

right eye is now in front of his right eye and nearly on a direct line. Explain to the patient that this point of light appears foggy or blurred but that he must stare at it constantly and attempt to see it clearly; caution him to pay no attention to the light from the retinoscope. The use of a fogging lens in front of the fixing is not generally stressed in the writings on static retinoscopy, but I think it a very valuable point. The patient naturally makes an effort to see the point of light clearly and in so doing, with the slight fog produced, there is an inducement for the accommodation to relax as much as possible—for the same reason that fogging tends to bring out latent errors. If the patient follows your instructions, there will be a relaxing of accommodation, moderate dilating of the pupil, a suppression of convergence, and only a small amount of obliquity. The light from your retinoscope will reflect from at, or very near, the macular area of his right eye.

The retinoscope is now flashed into the eye and rotated horizontally and vertically and the movement of the light reflex is studied. A with movement indicates that the neutral point is behind the operator which means hyperopia, or myopia of less than 1.50 D.; an against movement, that the neutral point is in front of the operator, which means myopia greater than 1.50 D. The position of the neutral point can be readily changed by interposing lenses. A convex lens brings it in toward the patient, a concave lens moves it farther away. The farther the neutral point is from the examiner, the higher the error and the slower the movement. The nearer the neutral point, the less the error and the faster the reflex movement.

You now proceed to add plus or minus spheres depending upon the character of the reflex until all motion ceases; then add a minus 1.50 sphere to your total and you have your ametropia corrected. If all motion ceases in one meridian but remains in the opposite, then you know you have an astigmatic error.

There are two methods of retinoscopy in astigmatia. One is to use spheres only, neutralizing each principal meridian separately and then combining and transposing. The other method, and by far the easier, is to correct one meridian with spheres and thus produce a simple astigmatia which will be easily recognized by a distinct band of light corresponding to the axis of the astigmatia.

Cylinders are now added until all reflex motion has ceased in all meridians.

There are some interesting diagnostic phenomena met with in cylinder retinoscopy. These have to do with whether the cylinder is placed at the right or wrong axis and whether too strong or too weak. If a cylinder is put on at the right axis but is too strong, you will get a reversal along this meridian; if too weak, some motion will remain. If a cylinder is placed at the wrong axis regardless of whether the strength is right or wrong, it will produce an appearance of mixed oblique astigmatism, i. e.;—with a movement in one meridian and an against movement in the one at right angles, but neither one will correspond to the axis of the inserted cylinder. This phenomenon will tell at once that your cylinder is placed at the wrong axis. The myopic meridian thus produced is called the specific meridian and the angle between it and the axis of the inserted cylinder is the so-called guide angle and varies with the strength of the cylinder used. A cylinder of proper strength at wrong axis produces a guide angle of 45 degrees plus one-half the degree of displacement. A cylinder too strong at wrong axis produces a greater guide angle while one too weak, placed at the wrong axis, produces a less than normal angle. In other words, when a cylinder is placed at the right axis, irrespective of whether the strength is right or wrong, it will not give rise to the so-called oblique astigmatism, but if placed at the wrong axis, even though the strength is right, it will produce this typical oblique astigmatism. This is an important phenomenon to study in doing retinoscopy, and if you once master it, the axis of the astigmatism can be determined just as accurately as with the use of an ophthalmometer.

Having completed the retinoscopy of the patient's right eye, the examiner now moves cautiously to the right until the patient can just see the fixation point with the right eye. His left eye is now virtually on a line with the examiner's left eye with which he now uses his retinoscope. To those whose right eye is markedly dominant, this will be a handicap but with practice, I believe it is possible to train both eyes satisfactorily. If not, you must use your right eye though some slight obliquity may result. You now proceed to shadow the left eye exactly as the right and you have objective findings far more accurate than any obtainable by any other

method without the use of drug cycloplegia. For accuracy it is well to put your full retinoscopic correction in each eye and repeat your shadowing before your subjective test.

In subjective testing it is my practice to begin with the full retinoscopic findings in my trial frame—without deducting my working allowance. In this manner your patient is fogged by 1.50 D. This correction is now reduced a quarter dioptré at a time until he is unfogged. If he sees clearly before you have reduced your working distance allowance, you will know that you have not corrected the latent error.

Now I do not wish to leave the impression that retinoscopy is the only essential part of a good refraction, but I do believe that, if it is once mastered and then routinely used as I have outlined, you will be able to do better refractions and find less need for resorting to drug cycloplegia. In children, high degrees of mixed astigmatism, squint and conic corneas, we all admit that thorough, complete cycloplegia is absolutely necessary, but these constitute a minor part of our refractions. The major portion are adults of whom the greater number are opposed to drops, and when comfort can be obtained otherwise, they appreciate it and send their friends to us rather than to an optometrist.

In closing and summarizing, I hope that I have brought to your attention the following points:

1. That we eye, ear, nose and throat men have lost a considerable income in our nose and throat work to the general practitioner and must make up this loss by increasing our eye work.
2. That the optometrist is getting more refraction work than his ability warrants and that he is getting this largely through the general opposition to the use of drops, the fact that he is modernizing his offices in every way possible, and his high pressure sales methods.
3. That there is a value and accuracy in painstaking retinoscopy even without cycloplegia, providing strict attention is paid to certain details directed toward relaxation of accommodation, and avoidance of obliquity. Fogging of the fixing eye assists greatly in the suppression of accommodation, keeps the patient's mind on the act of fixation, and thus prevents wandering and obliquity.

DISCUSSION

Dr. Ralph H. Woods, LaSalle: Paradoxical but

true, papers on refraction presented to oculists create but little interest, when in reality they should create the greatest of interest, for the reason that refraction constitutes 85% of our income and there should be more papers and more discussions. I also think those papers should be practical material that can be taken back home and used like the one Dr. Lescher has just presented.

It fell within my early experience to have taught optics and refraction in the Southern California School of Optics, and I am still a registered optometrist in that state—license No. 722 issued thirty years ago—and I highly value that experience. The oculists as a whole have been fooling themselves on the score that the optometrist is only half baked. I want to thoroughly agree with Dr. Lescher that those people have their elementary optics, higher optics, physiological optics, accommodation and convergence at their finger tips. It is their stock in trade. It must, however, be acknowledged that the oculist has best general foundation, and because of this should be able to do everything the optometrist does and do it better.

For thirty-five years I have used the dynamic method of non-cycloplegic retinoscopy, which is rapid and certain. Time does not permit going into detail, only to say that in this we cause the accommodation to compensate the working distance. The error is then neutralized with a sphere and cylinder, as one would neutralize an unknown lens. What is then found in the frame is recorded exactly as it stands with no deductions or allowances. The technic is explained in detail in Chapter I, Part III of "Cardinals of Refraction," which will be off the press this month. It requires much more skill to do the shadow test with a contracted pupil than one under a cycloplegic, but it can be done and is done. Those who are keeping abreast of the times are doing it.

Whether one uses a concave mirror or a plano is immaterial. Get used to one and stick to it. To beginners I recommend the concave providing they have a clear conception of catoptrics, for the reason that "with" means plus, and "against" means minus the same as in neutralizing any lens. It is just one detail less to remember.

There is another factor that so many so-called refractionists overlook, and that is the measurement of the accommodation of every patient. With a working knowledge of Donders and an ordinary tape measure, one can easily determine those young adults who need a cycloplegic and those who do not. I think that all children should be refracted under atropine, after all determining the amplitude of accommodation. When measuring the accommodation it takes only two more minutes to determine the convergence. These two functions should balance. The ampliometer made by Uhlemann Optical Company makes both of these measurements easy, accurate and rapid.

There is an unwritten law in LaSalle, Peru and Oglesby that has existed for over twenty-five years. We are very proud of it. The eye, ear, nose and throat men in no way dabble in general medicine or surgery, nor do the general men interfere with anything in our field. Each recognizes the fact that no one man can

be good at everything; it is an impossibility, even if one does have a license. Some of the younger and less experienced men try it, but eventually become ashamed. From the point of view of the patient's welfare this situation is ideal.

I have harbored a notion for some years that this State organization should be subdivided into regional or sectional groups of exclusive eye, ear, nose and throat men, setting up some minimum requirements for membership. These requirements should be based entirely on previous training or years of exclusive specialization devoid of any high fees, examinations or other suggestions of a racket. With a complete stable organization of this sort some steps might eventually be taken to keep what is ours.

Dr. Thomas D. Allen, Chicago: To the victor belongs the spoils. If the optometrists can do better work than we can, they deserve to do it. If we do better work than they, we ought to do it. (It is a good thing for dogs to have fleas, and I think it is good for us to have these little barnacles around. It may put us on our toes and stimulate us to do better work.) One of the things that gets under the skin of some of our boys in Chicago is that optometrists say they hold a special license to practice on the eye, whereas the eye, ear, nose and throat man is just an ordinary doctor. I think if more of us pass the American Board of Ophthalmology we can certainly say we have a National organization back of us. More of the younger men ought to do this. It is not a severe examination, and one advantage is that if you do not make the grade in one particular subject, you realize that you are not quite up in it, and you can go home and study, and come back for re-examination.

As to optometrists having patients sent by physicians—that is a thorn in the flesh, in Chicago. The optometrist returns the patient to the general physician, and in talking this over with some of my oculist friends in Chicago, I find that we do not always return the patient to the doctor who sent him. It is a serious business, not to return a patient to the doctor who sent him.

In our office we do not have any trouble using drops. We have the patient lie down, and tell them we wish to make a test. We put in some pantocain and take the tension. Then we dilate the pupil to make a further examination. We do not get the question—"Is it necessary"—one time out of ten. We go about it in a routine way. How many of you have had cycloplegic examinations of your eyes in the last ten years—mighty few. It really is not bad, as you know; it does not harm the eye; it has no serious consequences, and very often we can detect abnormalities which are not detectable with a small pupil. I think if we go about our business, doing better work than we did last year, yes better than we did six months ago, we will have little trouble with our patients.

Dr. J. A. Oliver, Charleston: Dr. Lescher spoke about the general practitioner doing tonsillectomies. One of the things the optometrist claims is that plenty of doctors do refractions without training. In our neighborhood there are at least eight or ten practitioners doing refractions without any training whatsoever; so

they have some ground for their claim. I do not know how we will meet this problem, but unquestionably it is there. We cannot all reach the state of perfection that exists in LaSalle. No matter how consistently we return the patient to the doctor who sent him, the general practitioner continues to do tonsillectomies and to refer patients to optometrists for refraction.

Dr. O. T. Allen, Terre Haute, Ind.: I think this is a very practicable paper. I used to think it was impossible to do retinoscopy without a cycloplegic, but I find the longer I practice the fewer times I use it. I find I can do a dynamic retinoscopy. I think another mistake is using atropine in liquid form. One per cent is about as strong as you can use. You know the cornea absorbs this solution, and if you give it to the patient to use at home for three or four days, the chances are the muscles are not relaxed at the end of that time. I have always used 2 to 4% atropine ointment. You will have relaxation with that. During the last two or three years I have used scopolamine. You can get relaxation in the majority of children with that within an hour or so. I want to mention the method of refraction with red and green prisms. I use 20/100 letters and put on a sphere that gives equal clearness to the red and green letters in the chart. This is a good method to check the refraction after it is done.

Dr. C. W. Hawley, Chicago: Dr. Lescher has opened up a wide subject—so great that I do not know where to begin. One prominent thing brought out is that the general public does not understand the difference between the oculist, optician and optometrist. How are we going to educate the public to know the difference? It occurred to me the other day, from an article I saw in an optical journal, that the term "oculist" should be changed to eye physician." That might help. I thought it might not be a bad idea to bring this before you and to put it before the public in our papers. So I wrote up an article explaining the difference between the eye physician, doing a certain amount of work, the optician doing the mechanical work, and the optometrist treading on the toes of both of us. Nine out of ten times he is nothing but a jeweler who has picked up a case and claims to be an expert. He adds another thing to his name—"doctor." An optometrist answered my article, pointing out the wonderful difference between an oculist and an optician. He said they all had wonderful ability and education, that they were educated by universities in optometry and had certificates. As a matter of fact, very few of them ever go near a university to get an education. We all know their work. One optometrist in my town fitted a four year old cross-eyed boy with glasses, putting on a certain amount of sphere and on top of that a large prism, assuring the parents that it would cure the cross-eye. The prism changes the direction of the rays that enter the glass and the eye appears straight, but looking over the top of the glass one can see that the eye is as crooked as ever. The base of the prism throws the light on the macula and it looks straight, but it is not cured. The idea is that the prism will pull the eye over. When I first started practice in Chicago forty-five years ago, oculists were doing that very thing. I tried to show them that a prism would not cure a

crossed eye at all. It simply makes it so that when the parents look at the child's eye it appears straight.

Dr. Edwin R. Lescher, Elgin (closing): I do not wish to leave the impression that I advocate giving up cycloplegia. We cannot give it up. We must rely upon it in young children, in cases of squint, in high mixed astigmatism, and in numerous nervous non-cooperative patients. What I contend is that we do not pay enough attention to static retinoscopy. We should use it routinely at the beginning of every refraction and thus obtain a starting point,—without which you will only take up a lot of your own and your patient's time.

The agreement between general men and the specialist which Dr. Woods speaks of is ideal but, unfortunately, not practiced in many communities that I know of.

Routine cycloplegia such as Dr. Allen suggests may work all right in his practice but we of smaller communities feel the effect of the optometrist's propaganda, i.e.,—that we unnecessarily take people away from their work for some time and that we subject them to a dangerous test.

We can, with painstaking static retinoscopy, without a cycloplegic, fit the eye with the accommodation at rest. If we thus correct our ametropia, our patient will be comfortable for, after all, 90% of the patients, other than presbyopes, have normal accommodation for near.

MESENTERITIS RETRAHENS

WALTER W. VOIGT, M. D., F. A. C. S.

CHICAGO

In our experience with appendicitis we frequently observe an evident involvement of the mesenterium, which is exhibited as an edematous swelling comparable in appearance to a gelatinous mass and apparently consisting of an involvement of the lymph vascular supply with exudation. Occasionally there is swelling of the lymph glands or thrombosis of the blood vessels of the mesenterium. The severest cases are those with thrombosis of the vena mesocolica, since this often results in multiple abscesses of the liver and death.

It frequently does not occur to us that the rest of the intestinal tract also has a mesenterium which carries the blood, lymph and nerve impulses. We remember that pain from the intestine is conducted through the centers in the mesentery but we forget the possibility of disease also entering the mesentery from the direction of the bowel. Our indifference towards this possibility is due to the fact that this process of invasion is usually of so insidious a nature that it attracts our attention first in its terminal stage as a chronic intestinal stenosis.

Acute disturbances of circulation in the mes-

enteric vessels produce phenomena of such intensity that operation becomes indicated, although, as a rule, the diagnosis cannot be made preoperatively. The case here described is interesting because of its extremely chronic course, severe manifestations appearing only after several years.

The patient had been seen by me five years previously with complaint of pain beneath and to the left of the navel. This pain had been present for a long time and frequently assumed a colicky character, and was independent of food taking. The stools were well formed and, aside from a great deal of mucus, were not unusual; there was no blood. The patient was somewhat obese with rather insignificant varices of the lower leg. The heart and urine were entirely normal, the tonsils suspicious. Leukocyte count was about 8,000. No tumor masses could be palpated in the abdomen; there were no signs of ileus. Roentgen examination was refused by the patient because of the expense. At that time a diagnosis of sigmoiditis was made and the patient treated with diet, tannin and diathermy. His symptoms improved and after a few weeks of treatment he was not seen again.

Five years later I was summoned to his home. He was very ill and gave the following information: One year after he had stopped treatment he had suffered an attack of acute abdominal pain. A physician who had been called during the night immediately sent the patient to a hospital where a diagnosis of acute diverticulitis was made. Laparotomy was performed and a mass connected with the intestine was found. Drains were introduced but the mass left in situ. The patient was ordered to return to the hospital after two months for removal of this mass, but he felt relatively well and failed to return. During this four years he has been compelled to take purgative drugs continually, and the stools have been soft and unformed but without pathological admixture of any kind.

About four weeks ago this man again began to experience abdominal pains in the region of the operative scar. These pains at first were of short duration and moderate intensity but later became more frequent, lasted longer and were more intense. He lost ten pounds in weight and recently had noted a sensation of pressure on the bladder and, in spite of purgatives and fluid stools, he has had a great deal of trouble in securing bowel movements. There has been no vomiting.

At the time of this examination the patient was rather well nourished; his tongue was thickly coated and fetor ex ore was noted. The abdomen was somewhat distended. Below the navel in the midline was an operative scar, 10 cm. in length, with widely separated margins. In the region of the scar was a long hard mass and above and to the left of this mass there was a second mass about the size of a fist. It was not clear whether the two masses were connected in any way, but they were both tender to pressure. Firm and continuous intestinal contractions and borborygmi could be detected below the navel.

Blood count: Leukocytes 22,000 with a differential count of 87% polymorphonuclear leukocytes, 10% small lymphocytes and 3% large lymphocytes; 500,000 platelets.

The patients' temperature at the time of examination was 99.2° F., but after transporting to the hospital it had risen to 102° F.

A diagnosis of chronic intestinal stenosis, presumably due to carcinoma of the sigmoid flexure, was made. Laparotomy was performed with excision of the old scar. Upon opening the abdomen an absolutely hard loop of bowel was found leading from right above to left below. This loop was so rigid and fixed in position that it could not be brought out of the wound and could not be moved in any direction. The mesentery was markedly shrunken, shortened, hard as a board, and about 1½ cm. in thickness. From many of the veins on the cut surface could be extruded long, vermicular thrombi; at other places the thrombi were more or less organized. The mesentery showed radial bands of old hemorrhage and cicatricial processes leading centrally to a hard mass at the root of the mesentery. This mass, the size of a man's fist, was buried beneath the intestinal loops. When the intestinal loops were separated, the mass was disclosed as a large abscess containing, as subsequent bacteriologic study disclosed, streptococcus hemolytic. The abscess apparently arose from a phlegmon of the mesentery which broke through and became covered over by the loops of intestine. Everywhere were both old, firm and fresh, softer adhesions, making adequate exposure of the focus of suppuration extraordinarily difficult. The mesentery was apparently twisted clockwise through an arc of more than 90 degrees. The loop leading to the hardened loop of intestine was softened and edematous. This was immediately succeeded by the hardened loop itself, about 50 cm. in length, firm and nodular to the feel and finally followed the continuation of the gut, which had collapsed down to the size of a lead pencil, and was entirely empty. In many places in the mesentery old, hard or freshly swollen lymph glands could be felt.

After carefully packing away the abdominal contents with lap sponges, the abscess was opened and large amounts of pus were removed. The bed of the pus pocket was dried and the cavity temporarily tamponed. The diseased portion of the bowel together with its mesentery, was then excised until sound tissue was reached, and an end-to-side anastomosis done. The abscess cavity was then drained and situation sutures applied. The intestinal function was soon brought into activity by means of the arc lamp and prostigmin.

During the first postoperative week, the patient's temperature was normal except for mild evening elevations, but in the second half of the second week the evening elevations rose to 103° F. without preceding chills, returning to normal on the following morning. There was no infection of the external wound and liver abscess could not be detected. Therefore, a recurrence of the thrombosis was assumed and injection of anti-streptococcus serum and 20 c.c. of autohemis injections were administered. The temperature fell

promptly and remained normal, and the leukocyte count also returned to normal value. At the end of the fourth week the patient was discharged from the hospital. Aside from a small granulating wound he was completely cured and resumed his ordinary occupation.

This case, because of its extremely chronic course, extending over a period of five years, and the evident tendency to spontaneous healing, presents a picture which has not been described in the literature as far as I am able to determine.

The disturbances of circulation in the vessels of the mesentery due to embolism or thrombosis and the changes induced thereby present a certain resemblance to primary disease of the intestine and may lead to unpleasant diagnostic error. The blood supply of the bowel is an extremely rich one. In and from the triple arcade-like formation of the blood supply to the intestine there takes place a profuse interbranching, and in an otherwise normal vascular system, embolism or thrombosis of the arteries of the mesentery usually runs a symptomless course. The nearer the occlusion occurs to the origin of the artery, the greater the difficulty of supplying that part with blood through the collateral circulation. In cases of occlusion of the superior mesenteric artery there is always severe damage to the intestine. In these cases the blood supply can only be provided by the gastroduodenal and the inferior mesenteric arteries. With interruption of the trunk of the superior mesenteric artery, circulation stops over the greater portion of the small intestine; there results a hemorrhagic infarct and, in case the circulation is not immediately reestablished, necrosis of the intestinal wall ensues. Closure of the mesenteric veins results in a similar anatomic picture. Here thrombosis alone comes into question, as embolism can only occur in the case of a retrograde blood current. The etiology is usually an enteritis, especially in the presence of portal stasis.

Embolism of the mesenteric artery as a rule starts off with intense colicky pains. Later there appears some diarrhea with some blood, or paralytic ileus develops with eventual local peritonitis, the infarcted intestinal wall becoming pervious to bacteria. In any event, in cases of acute occlusion of the mesenteric vessels certain symptoms are present which aid in establishing a diagnosis. If a definite diagnosis cannot be made, at least immediate operation is indicated

which will clarify the diagnosis and enable the proper treatment to be given.

The clinical picture is different in the case of an infection of the connective tissues of the mesenterium, a mesenteritis or phlegmon, when it runs an insidious course. Lymphangitis is seen in every case of appendicitis, infection taking place by way of the lymph vessels. The changes in the blood vessels resulting from infection, i.e., inflammation and thrombosis, are the consequence of a perivascular lymphangitis. A single thrombus may progress to thrombi in the region of the portal vein, to septic embolism of the liver and to the very fatal multiple abscesses of the liver. The poor prognosis of appendicitis in older people may be ascribed to this mesenteritis where, as a result of age, lowered resistance of the tissues, weakened heart, arteriosclerosis, etc., the process assumes a graver course than in the younger person. In the event of more severe involvement of the mesenterium, it is better to resect this structure entirely, with peritonealization of the wound surfaces. In some cases there even arises the question of ligation of the ileocolic artery, whereby a further spread of the infection is more certainly prevented.

In the case reported here, a correct diagnosis—enteritis with thrombosis of a small mesenteric vein—was impossible at the beginning of the condition. It should be recalled, however, that in any case of enteritis the mesentery may be involved and that in the presence of recurrence of the disease, marked changes in the mesentery may eventually be expected. A roentgen examination (which was refused in this case) could apparently not have afforded any additional certainty at the beginning of the process. A more thorough study of the blood picture might perhaps have allowed more definite decision, but in the beginning the indication for surgical interference could hardly have been established.

How can one explain the further progress of the process in this instance? Apparently an enteritis lay at the bottom, although primary disease of the mesentery has also been recognized. The primary disease consists of cases of tuberculosis of the mesenteric glands. However, even in these cases the germs must have passed through the wall of the gut, resulting in only mild manifestations. Such a process then results in a pure picture of mesenteritis retrahens. Eventually suppuration of the tuberculous glands

may lead to a circumscribed peritonitis. Usually, however, there are found only chronic changes in the mesentery and its lymph passages, i.e., whitish cicatrizations and star-like radiating flecks. In this condition the peritoneum itself is, as a rule, uninvolved. Therefore, adhesions and cicatricial membrane development are absent. The cicatricial flecks are not the residue of a previous peritonitis but of an old lymphadenitis and lymphangitis with shrinking of the gland. Lymphangitis leaves strand-like cicatricial tissue, passing radially from the intestine to the mesentery.

In contradistinction to the two forms of mesenteric involvement just discussed, the healed phlegmon of the mesentery causes, not only sclerosing processes and retraction with perhaps torsion of the mesentery, but also peritoneal adhesions as a result of the involvement of the peritoneal covering of the mesentery. In my case the condition had progressed to a walled in abscess.

In recent years a great deal has been said about regional ileitis. It appears that an enteritis may develop anywhere in the bowel, resulting in morbid involvement of the mesentery with all its sequela of cicatrization, retraction, thrombosis and abscess. The case reported here seems to have been an instance of localized jejunitis, as revealed by microscopic inspection, with infection of the connective tissues of the mesentery (phlegmon) and venous thrombosis, which damaged primarily the intestinal mucosa and led to necrosis and cicatricial stricture. Nutrition to the other layers of the intestine had been sufficient and gangrene did not develop. It was for this reason that the intestine felt nodular on palpation, and after opening the abdomen a number of stenotic areas were discovered (chronic ileus). The further development of the infection leads to star-like radiating and band-like scar tissue formation or mesenteritis retrahens, a malady of extremely chronic course. In this case intraperitoneal adhesions did not develop over the greater part of the involved mesentery, since the peritoneum was for the most part not involved; it merely helped in the production of dense scar tissue and contraction with a twisting or torsion of the mesentery on its short axis. Down at the root of the mesentery, however, there was a breaking through of pus with intra-peritoneal abscess formation and adhesions.

In summary, we have in this case the picture of chronic intestinal stenosis following localized enteritis and mesenteric phlegmon requiring five years for its complete development and only after that time giving the indication for operation. 6633 Sheridan Road.

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SULFANILAMIDE

A Brief Review of Its Development, Chemistry, and Clinical Use

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Synthetic organic chemistry has contributed many compounds which have been extremely useful in combating disease. In medical practice it is generally agreed that these chemotherapeutic agents have been most successful in the treatment of spirochaetal and protozoal diseases. The bacterial infections as a group have shown much more resistance to these agents.

In 1935, Domagk¹ in Germany made some observations on the protective action of a synthetic azo dye on artificially produced streptococcal infections in mice. This dye was known by its trade name as "prontosil." Similar results were also observed with a related compound which had the added advantage of being more soluble. The latter became known as "prontosil soluble." Further observations on the curative

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This review appeared in essentially the same form in the December number of *The Illini Scope*—A Student Publication at the University of Illinois College of Medicine.

The bibliography is by no means complete—only leading references are indicated from which complete source material is available.

effects of these compounds on hemolytic streptococcal infections in man were equally auspicious. In quick succession they became the object of intensive study and research; first in Germany, then in France, England and the United States.

This interest and enthusiasm is in part reflected in the number of scientific publications which have appeared on this subject in the relatively short period of time since February, 1935. In the *London Lancet* and in the *Journal of the American Medical Association*, for example, a total of more than fifty original contributions have appeared. This number does not include correspondence or editorials.

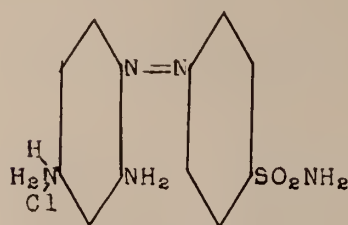
Perhaps these new drugs deserve this enthusiasm—this vigorous investigative activity.

The first investigations² on these compounds brought out some very interesting facts concerning their mode of action. In the test tube or in contact with culture media containing viable organisms of known potency the drug showed only mild bacteriostatic activity. In the animal body,

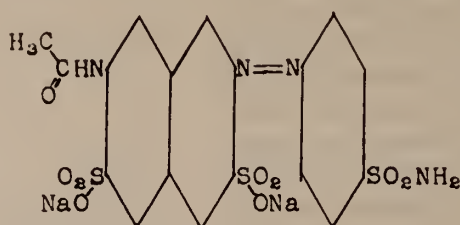
this peculiar discrepancy between its *in vivo* and *in vitro* effect. While all the facts are not yet available, cumulative experimental evidence⁴ seems to indicate that these compounds are not bactericidal in the sense of being antiseptics; that their action is primarily one of slowing down the rate of multiplication of the streptococci thus permitting the phagocytes to dispose of them before they exert a lethal effect.

It is not an exaggeration to state that at least 150 compounds of closely related chemical nature to sulfanilamide have been studied⁵ with respect to their protective action against bacterial infections, particularly of the beta-hemolytic type. Out of all these efforts it appears that sulfanilamide has the most desirable properties. It may be given by mouth or by injection. Prontosil-soluble is sometimes used for parenteral therapy. Prontosil, the original dye, is seldom used.

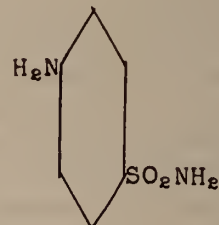
The chemical relationships of these compounds are brought out from their structural formulae: (See Fig. 1.)



Prontosil
(4-sulphonamido-2:4
diamino azo benzene
hydrochloride)



Prontosil Soluble
(disodium salt of 4-
sulphonamido-phenyl-
azo-7-acetyl-amino-1-
oxynaphthalene-3:6-di-
sulphonic acid)



SULFANILAMIDE
(para-amino ben-
zene sulphonamide)

"Prontylin" and
"Prontosil Album"
are proprietary
names.

Fig. 1. Structural formulae of the Sulfamide Compounds.

on the other hand, the same organisms soon disappeared from the body fluids after administration of the drug. It was suggested that the curative action of the drug was due to a stimulation of the natural defenses of the body to such an extent that these were able to overcome the infection. It was subsequently shown³ that prontosil is reduced in the body with the formation of a compound which is known chemically as para-aminobenzenesulfonamide. This compound, which has been given the non-proprietary name "sulfanilamide," also shows to a lesser degree

In its clinical applications sulfanilamide has been shown to be efficacious in the treatment of infections due to beta-hemolytic streptococci—particularly in puerperal sepsis,⁶ septicemia, surgical infections with hemolytic streptococci, erysipelas,⁷ streptococcal meningitis,⁸ otitis media, tonsillar infections,⁹ and others. Furthermore it is becoming increasingly apparent that its usefulness is not limited to infections due to streptococci. Its use and effectiveness in the treatment of gonorrhea¹⁰ is pretty well established. The meningococci¹¹ and certain types of pneu-

nococci¹² are also vulnerable to the drug. From reports it appears to have found a place along with other chemotherapeutic agents in the control of certain types of bacillary infections of the genitourinary tract.¹⁸

Methods¹⁴ are now available which allow for accurate quantitative determination of sulfanilamide in biological materials. To be able to correlate the concentration of the drug in the blood with the patient's clinical improvement is of prime importance in establishing a rational basis for therapy. In man and in some experimental animals the major portion of the drug is excreted unchanged by the kidney. Part of it appears in a conjugated¹⁵ form in the urine. At present it is not known whether this conjugated (acetylated) derivative has any therapeutic potency.

While reports of experimental and clinical observations on the use of sulfanilamide have in a large measure been very encouraging, it cannot be overemphasized that the drug is toxic and that there are some real dangers involved. Nothing is more certain to throw unwarranted discredit on an otherwise valuable discovery than its indiscriminate use. Early in its development the close chemical relationship to aniline was pointed out by toxicologists as a potential poison to hematopoietic tissue. Many cases of cyanosis occasionally associated with sulfhemoglobinemia have been observed. Other complications¹⁶ coincident with its use are: hemolytic anemia, febrile reactions, acidosis, urticarias, allergic manifestations, and other undesirable effects of lesser importance. What constitutes a dangerous quantity of the drug is not yet established. Prudent clinical judgment recognizes its toxicity on one hand and a possible idiosyncrasy in the recipient on the other.

Recently the American Medical Association published reports¹⁷ of more than seventy persons who have died from taking a proprietary concoction sold under the name "elixir sulfanilamide" (Massengill). Analysis of this elixir showed that it contained about 72% diethylene glycol, 10% sulfanilamide, and the remainder water. When diethylene glycol is taken in divided doses comparable to those recommended by the manufacturers of this "remedy" it is a decidedly toxic substance and a cumulative poison. It was the causative agent in the deaths.

This incident bears no relationship to the proper use of either sulfanilamide or diethylene glycol. That such a catastrophe can happen here is a reflection of the glaring inadequacy of our present food and drug laws. Further than that, the pharmacist who is willing to sell dangerous drugs to anybody over the counter and the doctor who prescribes such unstandardized semisecret nostrums must bear some of the onus for such a tragedy.

In conclusion I believe that the most conservative medic will admit that sulfanilamide has a useful place among other chemotherapeutic agents. It is by no means infallible. It is for the profession to discover its limitations and dangers, which bring to mind this pertinent observation:¹⁸ "Every new agent announced should be given its day in court; it should have a fair trial, after which it will reach stability at its proper level of usefulness."

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Mapharsen administered to 28 patients with cardiovascular syphilis in doses varying from 20 to 40 mg. produced marked clinical improvement in 22 patients. Of this group, only two evidenced any reaction to Mapharsen, this being in the form of slight nausea. The wide prevalence of cardiovascular syphilis and the difficulties of treatment again emphasize the value of Mapharsen. Appel, B., *New England J. Med.* 217: 992, 1937.

THE USE OF NUPERCALINE IN OIL FOR THE ALLEVIATION OF POSTOPERATIVE PAIN IN HEMORRHOID ECTOMIES

Report of 100 cases

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It must be conceded that the most skillfully performed hemorrhoidectomy is painful, no matter what technique is employed. The post-operative period of pain, sphincter spasm and urinary retention leaves an indelible impression upon the patient and provides reminiscent material for discussion and condemnation. Although these symptoms may be exaggerated by some or unheeded by others, it is only too well known that the pain is often not only excruciating, but especially overwhelming during and after the first few bowel movements. The stool, as it passes over the raw surface of the operative field, precipitates a spasm of the external sphincter, aggravates an already existing pain, and as a consequence, prolongs the agony for several hours. An effort is then made to alleviate the pain and distress by constant application of hot packs and hypodermic injections of morphine sulphate, or administration of other equally potent sedatives.

Hemorrhoidectomy is rather unpopular. It is intentionally avoided or deferred until an emergency arises. Unwisely, at times, the diseased condition is treated by palliative methods, occasionally to the detriment of the patient. The patient, however, is not alone in the attempt to avoid operation, because we who are cognizant of the pain and distress attending such procedures, often sympathetically suggest methods for temporary relief. R. R. Best,¹ in an address before the American Proctological Society in 1933, stated: "To my knowledge there exists no method whereby a patient may be brought through the postoperative phase of anorectal disease without some distress." An excellent example of dangerous procrastination due entirely to fear of this "excruciatingly painful operation"

is that of Dr. S., aged 58 years. History of protruding bleeding internal hemorrhoids for twenty-five years. Unquestionably a surgical case. Was suddenly seized one evening while sitting at the dinner table with prolapsed thrombotic internal hemorrhoids which ultimately became gangrenous. Conservative measures administered for two days became unbearable and he willingly submitted to an operation. Despite contra-indications, hemorrhoidectomy was performed, the patient was immediately relieved, and made an uneventful recovery.

Is a painless hemorrhoidectomy possible without submitting the patient to unnecessary danger? Is there any anesthetic agent which can be employed to prolong the period of local insensibility and eliminate sphincter hyperirritability? If this can be accomplished and the surgeon can conscientiously assure his patient that postoperative suffering can be mitigated, it will do much to overcome the usual objection to the operation, and will encourage the adoption of preferred surgical methods for the treatment of all anorectal lesions. It will also, by the same token, discourage the abuse of palliative measures.

A preparation suitable for this purpose must fulfill three essential requirements. First, it must be non-toxic; secondly it should be, as far as possible, applicable to every case without producing untoward reactions, and, thirdly, it should assist in producing complete muscle relaxation and in providing prolonged anesthesia to the region operated upon, thus allowing the wound to heal sufficiently before sensation is restored.

R. V. Gorsch², in collaboration with Yeomans and Mathesheimer, conceived the idea of injecting oils fortified with anesthetics and antiseptics into the perianal subcutaneous tissue for the treatment of pruritus ani and later for the alleviation of postoperative pain. In 1927 they introduced the first oil soluble anesthetic, benacol. Since then a number of such preparations have appeared. Intensive study has been made of the use of some of these preparations. Wheeler,³ in a study of benacol, asserts that it desensitizes the operative area for three to five days. Gorsch⁴ used the same solution to which he added butesin and basic procaine with similar results (anucaine). Frankfeldt⁵ obtained anesthesia for four or five days by injecting three c.c. of nupercaine

From the proctologic service of the Elgin State Hospital.

in oil into the sphincter muscles. Simmons⁶ reported thirty hemorrhoidectomies in which relaxation was secured and prolonged anesthesia induced with the use of nupercaine in oil. It appeared to us that elimination of postoperative pain in psychotic patients would be of invaluable aid in rendering postoperative care.

A study of the action of nupercaine in oil was, therefore, undertaken in March, 1936. We employed this preparation as a supplemental anesthetic in one hundred unselected hemorrhoidectomies. No attempt was made to exclude any patient excepting, of course, extremely poor surgical risks. Those with local findings ordinarily contraindicating surgery were not excluded. Therefore, all acute cases with thrombosis of internal hemorrhoids and perianal edema were included in this series. We also included a number of private cases. This group may be considered as a control.

Nupercaine is non-toxic, has antiseptic properties, and may retard healing due to temporary and partial incontinence it produces to liquid stools. Kilbourne⁷ states that nupercaine is something like a hybrid of quinine and procaine containing as it does the quinoline ring of quinine and the diethylamino ethenol radical found in many of the procaine series. It was synthesized by Karl Miescher and studied by Uhlmann, Lipschitz and Laubender⁸ and others.

Nupercaine in oil must not be used as the operative anesthesia. It is employed wholly for its ability to produce marked relaxation of the sphincter apparatus and prolonged desensitization of the operative area. The effects to be obtained from the administration of this oil depends, in great part, upon its proper distribution. This implies an understanding and complete knowledge of the anatomy of the anorectal structures and their nerve supply.

The type of hemorrhoidectomy performed does not in any way influence the method employed for the administration of an oil soluble anesthetic. It is, however, extremely important to have sufficient, if not complete relaxation of the sphincter muscles in order to satisfactorily inject the oil, minimize the danger of pooling the solution, or penetrating the mucosa, or of depositing the fluid too superficially. We have found a caudal anesthetic using 30 c.c. of 2% novocain exceptionally efficacious in producing the desired anesthesia and relaxation. Only four

cases or 4% of the entire series failed to respond to this, probably due to the fact that the novocain solution was either not deposited in the epidural canal, or absorption was exceptionally slow.

After the caudal anesthetic is given the entire region is prepared and draped. A well lubricated left index finger is introduced into the anal canal to guide the direction of the needle when injecting and to avoid penetration of the mucous membrane which may cause infection. It is not mandatory to have the needle and syringe absolutely dry. The oily solution which has been previously heated is drawn into aluerlok syringe through a large calibered needle, and after the desired quantity is obtained, a change is made to a needle $2\frac{1}{2}$ " by 19 gauge. This is absolutely necessary since the rapidity of the flow, even though the oil be warmed, cannot be controlled when using a smaller gauge needle. The initial prick is made one inch from the anal verge at about 10 o'clock. This is carried through the entire thickness of the skin. Beyond this point the solution is forced in front of the needle slowly and evenly for a distance of $2\frac{1}{2}$ " and in a radial fashion parallel with the course of the rectum. The needle should be kept moving during the injection to avoid pooling and intravenous injection. Next, the needle is withdrawn to a point just underneath the skin, and is then re-inserted into the superficial and deep portions of the external sphincter muscles until a total of 3 c.c. is injected into this region. This is repeated at three other points, 3 c.c. at 2:00 o'clock, and 2 c.c. at both 5:00 and 7:00 o'clock. After the injection, the peri-anal and anal regions are thoroughly massaged to distribute the oil evenly and prevent seepage. The solution must be injected into the subcutaneous and deeper tissues and not intradermally, otherwise a slough will inevitably occur.

One-hundred hemorrhoidectomies were done in which nupercaine in oil was used. One patient was not operated upon because he developed an edema of the rectal mucosa immediately following the injection of the nupercaine. We have subdivided our cases into two groups. One group of 72 cases was operated upon at the Elgin State Hospital, and consisted entirely of psychotic patients. The second group of 28 private cases were operated upon in Chicago and Elgin.

The amount of nupercaine in oil injected varied from 10 to 20 c.c., with 10 c.c. being used

in almost three-fourths of our cases. We found 10 c.c. to be quite sufficient if properly distributed. A larger quantity was not in any way advantageous.

Advantages: The preparation in most instances produced a profound and lasting anesthesia. The patients were very comfortable, made no complaints and experienced no untoward effects. This is especially true of private patients.

An analysis of our records revealed an anticipated fact that the number of hypodermic injections of morphine needed for relief of pain or distress was markedly decreased. The patients did not complain of any pain, but some, particularly those institutionalized, were extremely nervous and irritable. This may be attributed to their mental condition. However, 31% of our cases required one injection of morphine usually between 8 to 12 hours postoperatively, whereas only 6% required two injections on successive nights.

Only five patients or about 5% had to be catheterized postoperatively. The need for catheterization was markedly lessened due to anesthesia of the nerve fibres which supply the anus and remotely the vesicle sphincter. The ano-rectal nerve control has practically the same central origin as the genitourinary apparatus, which accounts for the various reflexes that affect the systems similarly.

An interesting study was that of the postoperative loss of sphincter tone observed in these cases.

Patients were examined digitally on the 6th, 8th, 13th, 15th, 20th, 27th and 34th days postoperatively. There was a gradual progressive return to normal, with the exception of one patient who had a loss of sphincter tone for 70 days. In 84% normal tone was noted by the 14th day, and in 12% normal tone was noted by the 27th day. We found that the period of analgesia corresponded to the return of the sphincter tone. In several of the cases, patients complained of numbness about the anus lasting several weeks. A few were incontinent to passage of flatus for two to three weeks, and one to liquid stools for 34 days. This incontinence was not severe enough to incapacitate one in any way.

Disadvantages: In our series, complications occurred in 12 cases. A detailed history of each

case is given in Table I. One reaction, evidently on an allergic basis, was edema of the rectal mucosa which immediately followed the injection of the nupercaine in oil. This peculiar reaction consisting of a sudden and marked edematous swelling of the mucosa might have been caused by the superficiality of the injection; but nothing further occurred aside from this unusual and extremely severe localized tissue reaction which subsided within a few hours. In this series reactions ranged from a painful induration with slough, to a chemical abscess formation. There were five of the former and five of the latter and one severe case with extensive involvement of the perianal and rectal regions culminating in the formation of a bilateral ischiorectal abscess, with extension into the perineum. This patient, case 3, had a severe systemic reaction in addition to the local. He became extremely toxic, ran a septic temperature, had chills and other concomitant symptoms characteristic of a fulminating infection, which gradually subsided after an illness of two months. The abscesses were incised and the wounds healed spontaneously but very slowly. All our cases healed completely and uneventfully without a sequela. Reactions appeared as early as the fourth and as late as the twenty-first postoperative day. With the exception of this one very unusual case, no systemic symptoms were discernible in any other patient. The local symptoms began with a feeling of fullness in the perianal region, gradually developing into a painfully indurated mass or further into an abscess. The lesion was not incised until a definite fluctuating swelling was palpated. This was followed by a course of local dressings and hot sitz baths. The duration of complications ranged from 14 to 77 days, excluding case 3, the average being 28.9 days. No residual symptoms were noted.

It must be borne in mind that this is not an infective process but a chemical reaction of the tissue to the oil or to some other component part of the preparation. We do not believe it is due to either the benzyl alcohol or the phenol content, as suggested by Gorsch.⁹ Nor do we believe it can be entirely attributed to pooling because of the care exercised in the administration of the solution. Patch tests performed upon a number of these sensitive patients were negative. However, it is interesting to note that none of the

private patients was afflicted, probably due to their superior physical condition and resistance. The technique employed in every case was identical. Despite these unfortunate and decidedly unpleasant complications, it is extremely gratifying to note that 88% of our patients were completely free of all pain and distress during the entire postoperative period. Our private patients, some of whom were physicians and dentists, enthusiastically endorsed the procedure. Steinberg,¹⁰ using 5 c.c. of nupercaine in oil in 30 cases of fissure in ano, reported development of chemical abscesses in four cases, or 13%. All healed spontaneously.

Contraindications: The contraindications to the use of an oil soluble anesthetic as defined by Gorsch are as follows:

1. Acute abscesses or suppurative processes of any kind around the anal canal or rectum.
2. Fistulae or fissure with abscess.
3. Strangulated (thrombotic internal) or sloughing piles.
4. Diabetes.
5. Debilitated people in whom tissue repair is poor. To this list we add an extremely important condition, viz:
6. Syphilis. (Untreated.)

Ordinarily, advanced cases presenting evidence of thrombotic internal and external hemorrhoids, perianal edema, and with or without tissue destruction are considered subjects for palliative treatment until all acute symptoms had subsided. We do not concur in this opinion and have not hesitated to operate on all such cases, even using the nupercaine in oil in addition to the usual caudal anesthetic. No complications or untoward effects have occurred at any time. We believe surgery is the method of choice in the treatment of these painfully acute conditions. The immediate relief, uneventful recovery, together with absence of any danger to the patient, cannot be ignored. Other surgeons, Fansler and Lynch, Gorsch, etc., have proceeded in much the same way, without encountering any serious complications or difficulties, although the former do not report having used an oil soluble anesthetic.

REPORT OF CASES WITH COMPLICATIONS

Case 1. W. B. Age, 54 years. Diagnosis: C. N. S. Lues. Anesthetic: Caudal block with 2% Novocaine Sol. 10 c.c. Nupercaine in Oil. Complication: Hemorrhoidectomy not performed; developed edema of rectal

mucosa immediately following injection of nupercaine in oil.

Case 2. J. B. Age, 54 years. Diagnosis: C. N. S. Lues. Operation: 10-13-36. Complication: 10-20-36—Slough at three o'clock, extending into ischio-rectal fossa. 11-10-36 completely healed.

Case 3. E. B. Age, 44 years. Diagnosis: Epilepsy with Deterioration. Operation: 3-2-37. Complication: 3-8-37—Elevation of temperature to 101°. Rectal examination negative. Physical examination revealed upper respiratory tract infection. Temperature normal for two days, then rose again. Rectal examination revealed submucosal abscess at nine o'clock, with right ischio-rectal abscess. Right ischial rectal abscess incised and drained and found extending to transverse perineal m.m. and crossing over and involving left ischio-rectal fossa. Submucosa abscess ruptured during digital examination. Patient continued to run a stormy course with daily rise in temperature. Temperature gradually became normal and condition gradually improved. 7-8-37—Completely healed.

Case 4. C. B. Age, 38 years. Diagnosis: Manic-Depressive. Operation: 1-28-37. 2-6-37—Healing nicely, loss of sphincter tone. Complication: 2-9-37—Small perianal abscess at nine o'clock incised; no pain. 2-23-37—Completely healed.

Case 5. E. B. Age, 42 years. Diagnosis: C. N. S. Lues. Operation: 12-15-36. Complication: 12-22-36—Large perirectal abscess at seven o'clock incised and drained; no pain. 1-14-37—Completely healed.

Case 6. M. D. Age, 50 years. Diagnosis: Dementia Praecox. Operation: 9-21-36—(Nursing record states that patient picked at wound). Complication: 9-29-36—Sloughed out area in posterior midline, with exposure of muscle, causing pain—sphincter relaxed. 11-3-36—Completely healed.

Case 7. G. H. Age, 32 years. Diagnosis: Dementia Praecox. Operation: 10-20-36. 10-27-36—Healing nicely. Complication: 11-3-36—Small sinus area at two o'clock in area of previous nupercaine injection—small amount of pus exudes from this area. 11-17-36—Right perianal abscess extending down to labia majora communicating with previously described sinus—opened under local novacaine anesthesia and old blood clot expressed. 12-1-36—Completely healed.

Case 8. R. H. Age, 61 years. Diagnosis: Dementia Praecox. Operation: 3-24-36. Complication: 3-31-36—Small sloughed out area at five o'clock. 4-21-36—Completely healed.

Case 9. A. K. Age, 45 years. Diagnosis: Undiagnosed. Operation: 4-21-36. Complication: 4-28-36—Small sloughed out area at five o'clock. 5-18-36—Completely healed.

Case 10. K. L. Age, 36 years. Diagnosis: Epilepsy with Deterioration. Operation: 9-22-36. 9-29-36—Healing nicely; sphincter relaxed. 10-13-36—Completely healed. Complication: 10-20-36—Returned to clinic complaining of pain. Left perianal abscess found which was incised with expression of three ounces of pus. 11-17-36—Completely healed.

Case 11. G. P. Age, 43 years. Diagnosis: C. N. S. Lues (GP). Operation: 8-20-36. 8-25-36—Healing

nically. Complication: 9-1-36—Sloughed out area in posterior midline, exposing coccyx. 9-8-36—Healing nicely. Complication: 10-20-36—Small sinus tract at nine o'clock. 11-3-36—Sinus tract healing. 11-17-36—Completely healed.

Case 12. A. S. Age, 33 years. Diagnosis: Undiagnosed. Operation: 11-17-36. Complication: 11-23-36—Small abscess at "three o'clock" extending into ischio-rectal fossa. 12-13-36—Completely healed.

Acknowledgment: The nupercaine in oil was supplied through the courtesy of the Ciba Company.

SUMMARY AND CONCLUSIONS

1. A study of 100 cases of hemorrhoidectomies is presented in which various amounts of nupercaine in oil were used to eliminate postoperative distress and pain.

2. This preparation is potent and effective in the production of prolonged anesthesia, of marked relaxation, and of comfort during the entire postoperative period, and in many cases after complete healing has occurred.

3. The use of this preparation is notwithstanding untoward effects. Complications caused varying degrees of pain and discomfort for a short period of time, but all the lesions healed spontaneously without the development of residual symptoms.

4. Debilitated, luetic, or uncooperative patients constituted the group susceptible to the development of complications.

5. Nupercaine in oil is only a supplement to any anesthetic commonly employed for the performance of hemorrhoidectomy.

6. When properly administered, this anesthetic gives the most gratifying results.

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PLEURITIC PAIN

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It is not uncommon in private and industrial practice to be confronted with the problem of pleuritic pain. It is also a well known fact that this discomfort is due to an irritation of the pleura and that the patient is made more comfortable when the excursion of the chest is restricted.

A standard and an accepted procedure has been to use adhesive tape as a means of strapping the thorax in both unilateral and bilateral conditions. Many of us are quite familiar with the results of adhesive strapping, which therefore needs no description here, except that in some instances a severe dermatitis has resulted and so instead of making our patient comfortable, we find that we have increased his pain and we are obliged to treat a skin condition. The reason for this is the fact that many skins are quite sensitive to adhesive tape. Some individuals are so sensitive that they begin to complain of skin irritation as early as six to twelve hours, others as late as three days.

As a result of the above observation, I have constructed and used an arrangement of tongue blades incorporated in adhesive tape, which eliminates the contact of the skin and the tape, yet limits the expansion of the thorax with resultant comfort. This device was observed to be of greater benefit in those suffering from bilateral thoracic pain.

This arrangement can also be used in simple fractures of ribs and in burns of the chest wall where severe pain was aggravated by the excursion of the thorax. There is no interference with the treatment of the burn because this support is easily removed and reapplied and in this way also serves the purpose of keeping the dressings in position. It is not advisable to use this device in elderly bed-ridden patients because of the restriction of respiratory movements of the chest wall.

The advantages of the thoracic cage splint are:

1. It is inexpensive and can easily be made with material at hand.
2. It eliminates the application of tape on the skin, thus preventing irritation in those patients sensitive to adhesive tape.

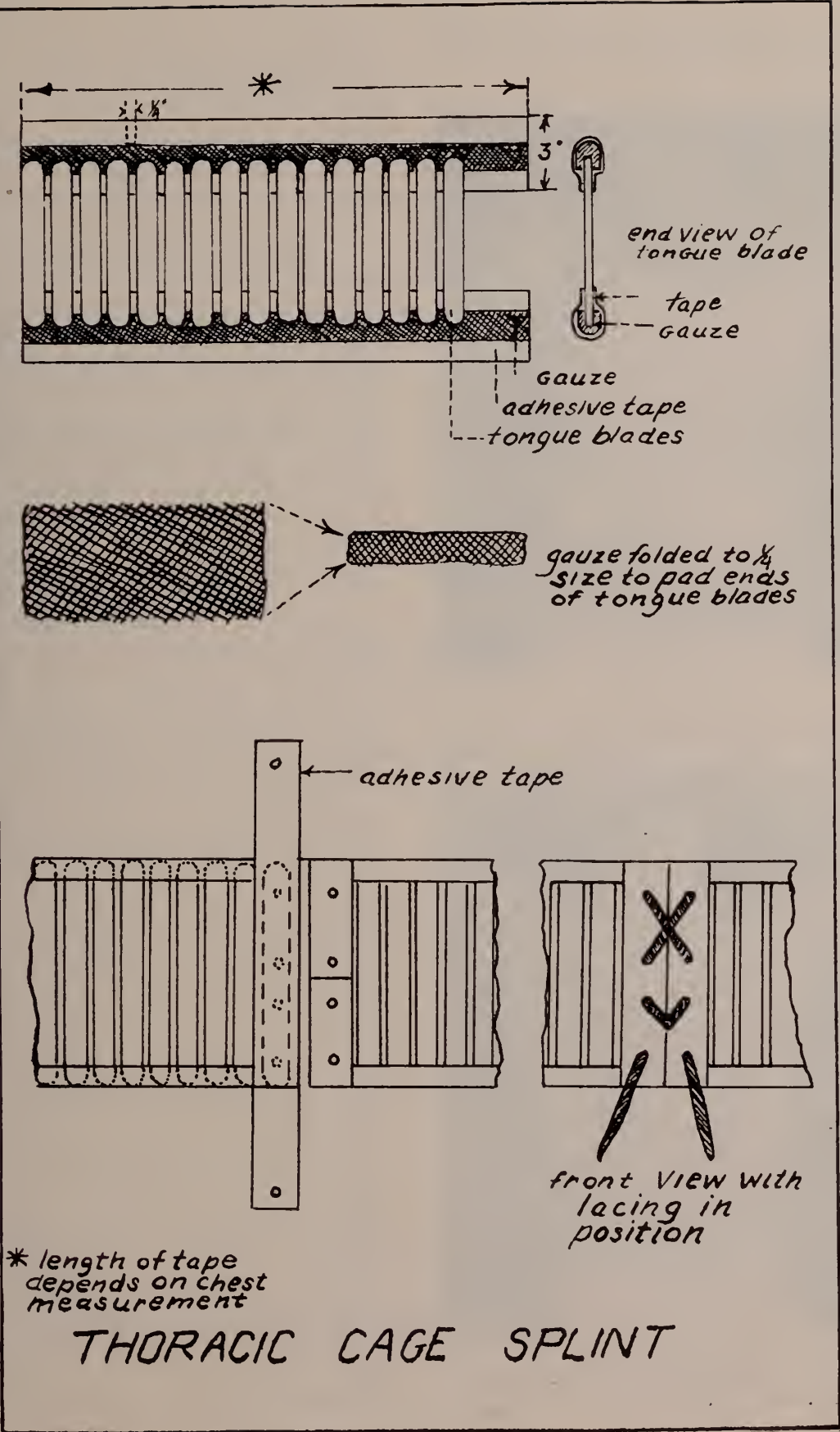


Fig. 1. Diagram showing the material used, their sizes and arrangement.

3. It can be easily applied and removed by the patient, thus enabling him to bathe as often as he desires.

4. It is light and durable and can be worn comfortably.

36 East Bellevue Place.



FRONT VIEW

Fig. 2. Ease with which dressings to chest can be applied in burn cases and limitation of respiration.



BACK VIEW

Fig. 3. Splint in position shows non-interference with movements of arms.

THE FACILITY OF VARICOSE VEIN TREATMENT

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Recent improvements in injection media and operative technic, and a broader surgical view in the estimation and management of varicose vein cases have greatly simplified their treatment and cure. The current facility of treatment has so increased the material available for study that the newer methods of management and technic can now be compared reliably with the old, and suitable changes made.

Four hundred patients were seen last year in this clinic; 25% were men, 75% women. Of the entire group, 20% entered with moderate to small varicose veins which they wished corrected for cosmetic or prophylactic reasons, because they had been refused employment, or because they had leg pains which were incorrectly attributed to varicose veins. In comparison studies, this relatively simple, cosmetic-prophylactic group was separated from the rest, because they can readily be cured by one, two or rarely three of any of the sclerosing agents and the case dismissed.

The remaining 80% entered with severe to moderate varicose veins, presenting definite therapeutic problems. It was unusual for the varicose veins to be of equal severity on both legs; they were usually severe on one leg and moderate or inconsequential on the other. Sixty per cent. of this group entered because of huge veins and because of leg cramps, and the remaining 40% because of such complications as varicose ulcers 17%, thrombophlebitis 15%, varicose dermatitis 5%, and varicose edema 3%.

In the entire severe to moderate group, one-third of the patients were treated by saphenous vein ligation and injection; the remainder by injections alone. In the presence of complications, the policy was followed of beginning treatment of the complications by Unna's boots,

From the Mandel Clinic of the Michael Reese Hospital.

elastic bandages, x-ray and dermatologic care. The underlying varicose veins were attacked when the complications began to subside. In 16 patients when the thrombophlebitis or ulcer had healed, no appreciable varices were found and treatment was ended. Twenty-eight patients were discharged without treatment because of specific contraindications.

The formidable "stripping" operations were avoided. They involved an average hospitalization of one month. There was a 2% mortality. Completely undisturbed wound healing by first intention was unusual. These extensive undermining and traumatizing operations in tissue so susceptible to infection as subcutaneous fat, and so laden already with microorganisms by virtue of varicose congestion, old thrombophlebitis and ulcers were open invitation to every conceivable postoperative complication. These included sloughing of the flaps, abscesses, septicemia, erysipelas, tetanus and gas gangrene. After all this difficulty patients began to return in five to seven years with a complete new set of varicose veins requiring treatment just as urgently as did the first.¹

The decision as to which patients were to be treated by preliminary saphenous vein ligation and which by injections alone, was based not necessarily on the severity of the varices, but on the determination by the Trendelenburg tests of moderate to marked reflux through the saphena magna at the fossa ovalis. In the absence of a marked reflux at the fossa ovalis even large varices are the result of numerous deep communicating channel reversals, and these can be corrected only by multiple injections. Vein ligation does not then add sufficiently to the efficiency of treatment to be worth while. When ligation is surgically indicated by the presence of reflux but is not performed, cure can still be obtained but only under handicap. Three times the number of injections were required, and the incidence of recurrence was doubled.

Ligation of the saphena magna was almost always done over the fossa ovalis within two inches of the inguinal ligament. The ligation must be high, because medial and lateral collaterals come into the saphena magna almost at its femoral entrance. Unless these are shut off, recurrence is likely, as seen in three cases of our series. The saphena magna is easily palpable in

the lower one-third of the thigh. In the middle third it dips into the subcutaneous fat and in obese patients cannot be followed. It becomes superficial again, however, in the upper third and even in obese patients with the patient standing can be located and marked. Additional, secondary ligations of huge channels lower in the thigh are rarely done. The saphena parva in the popliteal space required ligation in only two patients.

The ligations were done as ambulatory procedures in the clinic. The patients suffered a partial disability from their ordinary work of from two to seven days. There were no infections and no hemorrhages, but only two hematomas which subsided spontaneously. The vessels were doubly ligated by transfixion suture with no. 1 catgut and divided. At the suggestion of Dr. Ralph Bettman in one-third of the ligations, 2 c.c. of sodium morrhuate were injected into the vein just distal to the lower ligation while it was exposed to operation. A much more extensive primary thrombosis was obtained in these ligations than in the others. The reaction in the leg, however, was more severe. The disability was usually complete for two days and partial for seven, but the result was more efficient. In eight patients, no further injections at all were needed. The patients' convenience was allowed to determine the choice between greater temporary disability and faster cure with ligation and simultaneous injection, or less disability and slower cure without simultaneous injection.²

The best single improvement in the treatment of varicose veins came with the substitution of previous injection media by sodium morrhuate. Sodium salicylate, quinine dihydrochloride, glucose and sodium chloride were all useful, but had many disadvantages. Even with the most meticulous technic including tourniquets above and below, the use of a tilt table, emptying the vein of blood and applying prolonged compression afterward, there were often failures to get any thrombosis at all, and many more injections were needed. The sodium salicylate injections were accompanied regularly by violent leg cramps, the quinine occasionally by tinnitus. In 8% of the patients at one injection or another, a slough was obtained. Once a perivenous extravasation occurred efforts to dilute it had no effect

in reducing the probability of slough. The sloughs were painful, slow to demarcate, and took on an average eight weeks to heal.³

The use of sodium morrhuate almost completely changed the injection picture. In over one thousand cases in the last three years we have never seen a slough. This startling immunity to slough lies in the character of the injection media, and not to any abrupt improvement in technic. Even more remarkable than the safety was the effectiveness of sodium morrhuate. Special technic is no longer required except for occasional huge varices. The patients are injected, usually standing or sitting, with 2 c.c. of solution and without any particular ceremony. Hardly ever does the injection fail. The usual obliteration obtained was 6 cm.; often it was more, and in several cases the entire varicose venous column was obliterated by one injection. Occasionally more of a result than was bargained for, was obtained. The whole column became tender and painful, but never enough so to produce real disability. It required at worst no treatment except an ice bag, and subsided to leave behind a completely cured leg. Because of this potency of sodium morrhuate, more than 2 c.c. were never injected to begin with, and more than one injection in each leg was never given at one visit. The interval between injections was usually three weeks, but was never less than one week.⁴

The average number of sodium morrhuate injections required to cure a leg with moderate to severe varices but without appreciable reflux was 9, as compared with 22 in older series in which sodium salicylate, quinine or glucose were used. In this group, ligation was not done.

In the group with fossa ovalis reflux, the average number of morrhuate injections required to complete the cure of the leg was 7 in the patients who received ligation, in comparison with 20 in those who refused ligation. In the ligation group, those with simultaneous injection needed 6. Two-thirds of the patients who needed but refused ligation had minor recurrences as compared with one-third in the general group.

The only disadvantage to sodium morrhuate was the occasional allergic reaction. The frequency was about 1 in 250 patients. The usual manifestation was urticaria. An occasional, generalized reaction has been reported, but has never

been seen in this clinic.⁵ The urticaria occasionally appeared after the first injection, but usually only after several previous benign injections had sensitized the patient. Altogether they were rare, and their only significance was that they required that subsequent injections to complete the case be done with salicylate, quinine and glucose.

The Unna's boots were found still the best method for treating most varicose ulcers. Foul, infected ulcers had to be cleaned up first by frequently changed, mildly antiseptic dressings. Allantoin or urea dressings have been valuable for this purpose. For tiny ulcers adhesive striping, sponge pressure, elastic bandaging or the adhesive elastoplast may suffice. For the irritable ulcer over the malleoli, the undercutting operation may be needed. For old, large, deep, caloused ulcers bound to the tibia and inbedded in indurated tissue the only chance for cure lies in complete excision and replacement with a full thickness skin graft. For exceptionally huge ulcers, prolonged bed rest may be necessary. The usual ulcer of more than trifling size and without special complication was best cured by one, two or at the most three changes of Unna's boots.

The formula for Unna's paste which we used is:

Zinc oxide	100 grams
Gelatin	200 grams
Water	300 grams
Glycerin	400 grams

The paste is cut in individual portions containing about 8 cubic inches, enough for one boot. Any excess is discarded, because reheating destroys its efficiency. The paste is applied in two layers from the metatarsal heads to just above the convexity of the calf. The first layer is covered by stockinette, the second by a coarse-meshed gauze bandage which is wound in a pronating manner to support the arch, and is never reversed. The boots are left on for three weeks in hot weather and for five weeks in cold. Several substitutes for Unna's paste were tried, but none proved so satisfactory.

Acute cases of thrombophlebitis were put to bed with leg elevation and mild heat. X-ray treatment is of some value in the acute stage to help abort the process. The occasional seriously ill patient with an ascending suppurative thrombophlebitis approaching the femoral junction

should have a high saphenous vein ligation to avert the danger of septic emboli. When the acute stage subsides, an Unna's boot is applied before the patient is allowed out of bed. Calcium therapy was given to diminish the edema tendency. For persistent lymphedema, x-ray treatment was tried with some success above that obtained by Unna boot or elastic stocking. For the old, brawny, elephantiasic leg which has resisted all conservative therapy, the four stage plastic excision of the subcutaneous fat described by Homans is probably the best procedure.⁶

The sine qua non of all varicose veins occlusion therapy is that the deep veins be patent. No case was treated unless the Perthe's test proved the patency of the deep veins. The second absolute contraindication was arterial vascular disease of the extremities. The best friend of a man with arteriosclerotic occlusion or Buerger's disease, next to a high blood pressure, would be varicose veins. In the absence of a dorsalis pedis or posterior tibial pulse, varicose veins should be left undisturbed.⁷ Pregnancy was considered a relative contraindication to active treatment, not because treatment would do any harm, but because four-fifths of the varices subside spontaneously after the puerperium. A long elastic stocking and tight vulvar pad were advised. Only huge vulvar varices in danger of rupture during delivery were occluded by injection. Three months after delivery the few remaining varices were corrected.

About one-third of all varicose vein patients have flat feet or hallux valgus also. This may arise from a common congenital deficiency in veins, ligaments, bones, etc. About one-sixth of the older patients have an infectious or degenerative arthritis of the knee joint. Varicose vein obliteration was sometimes required because of congestive phenomena, but orthopedic or arthritic treatment was applied at the same time. Syphilis, diabetes and heart disease were not considered specific contraindications.

All patients were requested to return at the end of 3 months, 6 months, one year and once a year thereafter. Recurrences in the sense that one or two more injections were needed at the quarterly or annual visit to obliterate the varix or two which appeared at that time were frequent. One-third of the patients needed one or two

injections at remote intervals but under this supervision no case of recurrence has as yet been seen which required for its correction more than trifling treatment.

CONCLUSIONS

1. When there is marked reflux from insufficiency of the vein valves at the fossa ovalis, preliminary high saphena magna ligation is required. In the absence of marked reflux, ligation does not add enough to the efficiency of management, to make it essential.

In our series, one-third of the patients with moderate to severe varices require a ligation, the remainder can be treated almost as well without one.

2. Simultaneous injection during the vein ligation increases the thrombotic efficiency of the operation, but augments the temporary disability.

3. Sodium morrhuate is superior to previous injection media in its efficiency, safety and technical facility. Its only disadvantage is a rare allergic reaction.

4. The extensive "stripping" operations have been abandoned.

5. The treatment of complications of varicose veins in general precedes that of the veins proper.

6. The Unna boot is the single best procedure for promoting the healing of most varicose ulcers.

7. Absolute contraindications to the occlusion therapy of varicose veins are deep vein occlusion and arterial occlusion. Conditional contraindications are pregnancy and independent lesions which are in more urgent need of treatment.

8. Follow-up supervision will eliminate the possibility of any but trifling recurrence.

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SOME FACTS AND FALLACIES REGARDING PSYCHOANALYSIS

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To my readers, probably, nothing in this paper will be entirely new. However, there is, even among medical men and women, a surprising ignorance or misconception concerning psychoanalysis and psychoanalysts. Probably psychoanalysts themselves are partially if not largely to blame for these misconceptions. Psychoanalysts have often been exposed to unwarranted and unjustified attacks—in consequence they have been inclined to ignore these attacks and to offer no defense, and have done little to correct erroneous impressions of the science of psychoanalysis as well as its use as a technical procedure.

I shall confine what I have to say here to psychoanalysis as a technical procedure used to treat nervous and mental illness.

To use the term "psychoanalysis" or the designation of a person as a "psychoanalyst" means that he or she has been trained in the school founded by Freud, and to apply these terms to any one else is erroneous. On June 29, 1929, the *British Medical Journal* published an impartial investigation carried out by the British Medical Society, from which I quote:

There is in the medical and general public the tendency to use the term psychoanalysis in a very loose and wide sense. This term can legitimately be applied only to the method evolved by Freud and to the theories derived from the use of this method. A psychoanalyst is therefore a person who uses Freud's technique and any one who does not use this technique should not, whatever other method he may employ, be called a psychoanalyst. In accordance with this definition and for the purpose of avoiding confusion, the term psychoanalyst is properly reserved for members of the International Psychoanalytic Association. Thus clearly criticisms of psychoanalytic therapy or practice should be confined to the teaching and methods of those who are psychoanalysts in the true sense of this term. This is not always so and the committee has received a number of reports and statements adverse to psychoanalysis as a form of medical treatment which on inquiry are found to be based on

methods put into operation not by psychoanalysts but by other practitioners who adopt and accept the name but lack the qualifications.

In this quotation specific reference is made to membership in the International Psychoanalytic Association. In the beginning, like that of every other new science, membership in this society was not strictly limited. For this reason many people who had a real or even superficial interest in the science became directly or indirectly associated with it. As time went on the requirements for admission became increasingly drastic until at the present time admission to this association requires preparation probably unsurpassed by any scientific group.

General medicine and the establishing of certain rules and standards for medical practice, as exemplified by membership in the American Medical Association, went through a similar organizing process. As is well known, there was a time when the right to practice medicine could be attained through a three, or even two year attendance in a medical college. Before that it was possible to practice medicine after studying a certain length of time with an established physician who was called a preceptor or sponsor. The requirements gradually but steadily became more exacting until at the present time it requires a bachelor's degree before entering medical college, four or five years' attendance in medical college, and at least one year's resident internship in a recognized hospital, before the degree of M.D. is received by the student.

The standards for a psychoanalyst, which I shall outline, are very strict, and the International Psychoanalytic Society stands as a protective institution to the lay public in the same relation that the American Medical Association stands in medicine. The training requirements adopted by the Chicago Psychoanalytic Society, which vary only in some slight details from those of all the other societies, are briefly as follows:

The applicant must first of all have an M.D. degree, must have served a hospital internship, and have spent at least two years in psychiatry in a hospital accredited by the American Medical Association for the treatment of mental disorders. He must then make application and be passed upon by the Training Committee of the local society where he expects to undergo training, and must demonstrate both his intellectual ability and his emotional stability. He himself

Based on lectures delivered to:

The Psychology Club, Northwestern University, 1935.

Chicago Society for Personality Study, 1936.

Sociology Club, The University of Chicago, 1936.

Medical Social Workers Discussion Bloc, The University of Chicago, 1936.

First District Illinois Nurses Association, Chicago, 1936.

Michigan State Conference on Social Work, Kalamazoo, 1936.

must then undergo a psychoanalysis which can only be carried out by a recognized "training" analyst. This training analysis lasts a minimum of one year, and in most cases considerably longer. The candidate then must attend a curriculum consisting of a series of lectures and seminars conducted by the institute where he is in training.

When his own analysis is advanced to a point where his analyst believes the candidate is in a position to begin analyzing cases, he is assigned a case which he analyzes under the supervision or control of a training analyst (other than his own analyst). After he has completed the prescribed courses, finished the prescribed reading, analyzed one case to conclusion and three more cases, under supervision, for a period of at least one year, or to conclusion, he is required to read before the local psychoanalytic society an original paper about some aspect of psychoanalysis. Then he is eligible to take an oral examination before the Training Committee of the local society and if he passes this examination he is admitted (and not until such success) to membership in the local society. After a two year probationary period he is proposed for full membership and, if accepted, automatically becomes a member of the International Association.

It can be readily seen that after obtaining a bachelor's degree the psychoanalyst has before him a minimum of ten to eleven years' training before becoming an accredited analyst.

Following lectures on psychoanalytic subjects, a certain number of a routine type of questions are asked by various members of the audience. The questions most frequently repeated are as follows:

Who should be analyzed?¹

What type of mental or believed psychogenic illness can be benefited by psychoanalysis?

Why does an analysis require such a long period of time?

Why does an analysis cost so much?

Why are psychoanalysts so secretive about their work?

Why do psychoanalysts employ the particular technique they do?

What is meant by transference?

1. This paper was written before the publication of Dr. Lawrence D. Kubie's book, "Practical Aspects of Psychoanalysis" and therefore the similarities herein contained are entirely coincidental.

Is it true that patients always fall in love with their analysts?

Isn't psychoanalysis really only a fad?

Is it true that a patient always remains attached to his analyst?

Can children be analyzed? If so, how long does it take?

What is the age limit for psychoanalysis?

Is psychoanalysis more applicable to women than to men or vice versa?

Is it a dangerous procedure?

Is it applicable to the psychoses?

Has psychoanalysis contributed anything toward the understanding or cure of the psychoses?

To answer all these questions in detail would require a great deal more space than is possible in a paper of this kind, but most of these questions can be *briefly* discussed. First of all, psychoanalysis is based on definite observations and concepts, and an understanding of what the psychoanalyst is attempting to do can only be had in reference to these concepts.²

The first concept is: "that there are unconscious mental forces, that is, every individual possesses not only a conscious but an unconscious mind as well."

This follows the original formulations of Freud and forms the basis of psychoanalysis as a science. It is obviously impossible in this paper to defend the concept of the presence of an unconscious as well as a conscious mind. Freud became convinced of this fact when he witnessed the phenomena of post-hypnotic suggestion, i.e., in which a patient is hypnotized and instructed while in the hypnotic state to carry out later, at a given time or on a given signal, some irrational or even ridiculous procedure. Patients invariably complied with the suggestion, although they were not conscious of any reason for doing so.

Before the introduction of psychoanalysis, slips in writing and of the tongue, mistakes in names, forgetting to pay a bill, etc., were considered as merely mistakes—no one tried to understand them or find a motive. In Freud's "Psychopathology of Everyday Life,"³ he points out how

2. With the permission of the author I have quoted freely from Dr. Franz Alexander's book, "The Medical Value of Psychoanalysis," 1936, W. W. Norton and Company, New York.

3. Freud, Sigmund: Zur Psychopathologie des Alltagslebens, 1929, Int. Psych. Verlag, Wien.

these are unconsciously determined wishes and are unconsciously motivated. The same may be said regarding "purposive accidents," convenient headaches, forgetting of appointments, etc.

The second concept is the following—"These unconscious mental forces are of paramount importance in the determination of individual human behavior"—and

The third concept—"If in the course of development these unconscious forces come to dominate the personality of an individual, his behavior can only be influenced, modified or changed through making conscious the underlying factors."⁴

Briefly stated, this means that unconscious forces seek expression and that because they are unconscious they are expressed in a symbolic manner, for example by a symptom, or by impulsive, irrational behavior, and in so doing, lead an individual into mental difficulties (psychoneurosis, psychosis, character difficulties, etc.).⁵

In order then to relieve this conflict situation, it is necessary to make conscious these unconscious underlying forces which are seeking expression through the improper medium of a symptom, or by symptomatic behavior.

Now the fourth concept is this: "To find and modify the unconscious mental forces (to make conscious unconscious tendencies), requires the application of a highly specialized technique: the technique discovered and practiced by Freud and his pupils."⁶

In any discussion of the technique itself it must be understood that there are two highly efficient factors at work—one *intellectual*, the other *emotional*, and both lead to the alteration of infantile conscience reactions and their replacement by those of adult conscious judgment.

The technique itself is based on the theory of free association. By free association is meant the verbalization of thoughts which occur to a patient without the process of elimination, editing, or in any way changing those thoughts which seek expression. If this process is continued over a sufficient period, material of which the patient was previously unaware is gradually

brought to the surface. If, however, the process of suppression of material is permitted to enter (as obviously occurs when the method of free association is not employed), everything that is *closely* connected with unconscious material is automatically eliminated. We see then that the method of free association means the employment of a technical procedure which aims at *nothing more* than the overcoming of suppression, and as indicated, *if* this tendency (the tendency to suppress), is overcome, unconscious material *can* be made conscious.

The technique at first is actually an exacting capitalization of one of the oldest known methods of abreacting emotion, viz., that of confession. Almost every one has used this method in varying degrees since the beginning of civilization. The relation of patient to physician is similar in one respect to that of the Catholic confessional, and had the church *also* used this confession for the purpose of understanding sick minds it might well have learned much about the study of human personality. People find relief in telling their troubles to others, in "letting off steam," in crying—figuratively or actually—on the shoulders of a friend, some one in whom they have confidence. This constitutes an emotional abreaction and temporarily at least offers relief for anxiety.

This abreaction or verbal release of emotions often presents itself at the beginning of an orthodox analysis or even to some extent in the psychiatric interview as well. The patient soon learns that he can verbalize any and all the thoughts which occur to him. But in analysis we do not stop there—we do not say, "You are forgiven, go home and forget all about it."

What actually happens in an analysis is that the objective behavior of the analyst to anything the patient may say begins very early to affect the patient emotionally. He notices that thoughts, fantasies and tendencies which he so harshly condemns in himself are not condemned or even evaluated by the analyst. He sees that the analyst is only interested in the origin and meaning of certain manifestations; that the analyst is not a judge and that he is not on trial but that he has in the analyst an ally in the task of attempting to understand himself. With assurance, unconscious material comes nearer to consciousness and finally openly emerges. What

4. Alexander—loc. cit.

5. (a) A simple example of a symptom would be that of paralysis of the arm due to a repressed desire to strike.

(b) An example of a behavior problem might be that of delinquency, stealing, or exhibitionism.

6. Alexander—loc. cit.

really happens is that the patient's ego (total personality) becomes less dependent upon the super-ego (conscience), and the patient becomes, to a degree, emotionally dependent upon the analyst, and adopts toward himself an emotional attitude similar to the one the analyst has exhibited toward him.

By the super-ego I do not mean merely conscience as understood in the lay sense, but I refer to the broader term "super-ego" as coined by Freud and used to indicate not only a patient's conscious conscience, but the unconscious one as well.⁷

We know that our super-ego represents a precipitate of early education and embodied images of our parents. The super-ego (conscience) is formed through the process of identification with parental figures and those people with whom the child comes into personal relation during his or her formative years and always contains the elements "inust" and "must not"—i.e., the child soon learns that certain types of behavior are forbidden and others insisted upon. He also learns that some privileges are permitted the parents which are not permitted him.

This embodied image, or we may say this introjection of parental figures as can be readily understood, varies in different individuals, different civilizations, and even in different countries. The reason for this is obvious if we consider the differences in environmental situations.

Now the so-called transference of analyses (rapport of psychiatry) is a reproduction of the original child-parent relationship (a reproduction out of the past into the present). Patients in psychoanalysis soon come to recognize that emotional behavior during treatment is often an exact reproduction of childhood behavior. The revival of emotional childhood reactions which have played an important rôle in a patient's neurosis offers opportunity for understanding and reconstructing situations out of the past.

7. The difference between a conscious conscience reaction and an unconscious conscience (super-ego) reaction becomes easily understood by demonstrating instances of the two different types—for example:

(a) A man who has committed murder and because of his guilt feelings surrenders himself is quite conscious of the guilt and that he has, as a result, a "bad conscience"—

(b) A person who suffers from extreme apprehensions, the reasons for which are vague in character, knows that he is afraid but not that which he fears, is demonstrating an unconscious conscience reaction—that is, he knows he feels guilty, but he does not know the reason for his guilt.

The same tendencies which produced the symptom—the "neurosis"—are expressed in the transference itself. Freud called this the "transference neurosis," and it is this ability to transfer the old stereotyped reaction patterns to the analyst that makes an analysis possible.

These same reactions develop somewhat spontaneously in any form of psychotherapy, or even in the relation of a patient toward the physician who treats him for organic disease.⁸ The transference neurosis makes it possible to examine emotional reactions critically and exhaustively in the light of mature judgment and in accordance with social reality.

Probably the most important therapeutic contribution of psychoanalysis consists of the psychological understanding and handling of this transference phenomena.

The elimination of the transference neurosis takes place during the second part of the analysis as the patient comes to have confidence in and dependence upon himself and his own ego. The advantage of transferring neurotic symptoms into transference manifestations lies in the fact that transference manifestations are quite transparent to the analyst who is not emotionally involved, and who at the proper time can make them conscious through interpretations to the patient. This makes it possible for the analyst to help the patient find expression for his emotional attitudes and through interpretations force him to understand and face tendencies in himself which, *out of fear*, he has repressed.

The relaxed-serious-understanding, and *above all* non-critical and thoroughly confidential atmosphere of the analytic situation, encourages the patient to express himself in words and emotions *rather* than in symptoms. Transference manifestations, though qualitatively the same as the corresponding emotions of childhood, will be nevertheless quantitatively less intense. When, during an analysis, a patient expresses toward the analyst the same hostility which was originally directed toward the father or some other member of the family, the emotion will not have the same intensity that it had originally because the actual situation to which this emotion belonged no longer exists. To repeat, it is

8. This is clearly demonstrated in the quite general attitude of confidence and respect accorded the "family physician."

merely a projection out of the past into the present analytic situation.

At this point it might be well to discuss so-called "transference love." It is obvious to most every one that love and tenderness do not produce either guilt or any great conflict situations. By this I mean real heterosexual object love. It is rather the reaction to actual or believed loss of love that leads to conflict.

It is our hostilities which lead us into difficulties. For this reason it can be readily seen that in analysis we are much more concerned with hostility, so-called "negative transference reactions" and much less concerned with positive transference reactions—with the exception that intense positive reactions often hide, and are used as, defenses against making conscious the underlying hostility.

Therefore the essential point in the analysis of the transference neuroses is to aid the adult ego to face with mature judgment the same type of conflict which as a child his weak ego could not face or properly master. One of the best proofs of the results of transference interpretations is demonstrated during an analysis when corresponding forgotten infantile memories reappear in consciousness. By this I mean: a given transference interpretation (a little piece of insight relating to the present situation) is made to a patient, the patient becomes conscious of the emotional situation involved, and then remembers and reconstructs a similar situation out of his childhood, with adult insight into his emotional reactions.

When this is accomplished—and in substance it *must* be accomplished if an analysis is going to be successful—the patient gradually but surely comes to depend upon himself. He no longer has need of the analyst, but has found a new anchor, a new dependence, *within himself*. This answers the question referring to remaining attached to the analyst. If he does remain so attached, his analysis has either been left unfinished, or his ego is and always will be too weak for complete independence. (I will refer later to cases of this nature.)

In psychoanalysis we are thus enabled to follow exact psychological processes in patients during treatment, and to make of analysis an exact psychological method. This is in contrast to other psychotherapeutic measures which, whether

successful or not, are based on empirical observations. It should be understood, however, that the application of psychoanalytic technique is limited, and this leads to the question of who should be analyzed. This question is often asked and little understood. Actually I believe it can only be answered by the psychoanalyst himself, and it is his first duty to determine whether or not the patient *should* be analyzed, i.e., whether or not a given case will benefit by analysis and this decision involves many factors, such as the strength of the patient's ego, the reality situation in life, the cooperation of close relatives and friends, etc.

It has been found that a certain definite class of so-called "nervous and mental disturbances" are amenable to psychoanalytic treatment. These include the psychoneuroses, such as major hysteria, conversion hysteria, compulsion and obsessional neuroses, anxiety neuroses, certain character difficulties, and a number of somatic manifestations which have been proven to be psychogenic in origin.

The Chicago Institute for Psychoanalysis has been engaged for the past four years in investigating somatic disturbances which seem to have a psychogenic basis.⁹ During this research project they have studied several cases of spastic colitis (with constipation and with diarrhea), several cases of peptic ulcer, a few cases of chronic constipation, a few cases of neurotic character, some cases of petit mal, some manic depressive psychoneuroses, some cases of essential hypertension, and some cases of organized paranoia. They are now, and have been for the past two years studying a large number of cases of asthma, hay fever, urticaria, and other allergic physical manifestations. Their results have demonstrated that a large percentage of these cases are amenable (with good therapeutic results) to psychoanalytic investigation.

It is obvious that in certain infantile types in which the ego is not fully developed and therefore could not stand the process of analysis, and certain types of schizophrenia where the ego has abandoned reality testing entirely, the employment of psychoanalytic technique is not practical. Considerable research is being done with the aim of strengthening and re-educating the ego by

9. In this connection see the yearly reports of the Chicago Institute for Psychoanalysis.

some preliminary treatment in the aforementioned types.

Psychoanalysis has contributed much to the understanding of the psychoses. This is fully admitted by most progressive psychiatrists. How much psychoanalysis can do for psychotics therapeutically is still problematical—but with increased funds and facilities for research, and with more sympathetic understanding on the part of individuals in position to advance further study, much may be expected.

Psychoanalysis does not claim to be able to cure all forms of mental disturbance or all kinds of pathological personalities. *"It only maintains that all future methods of psychotherapy, to be effective, must be based on an understanding of fundamental psychic processes, just as organic medicine has founded its therapeutic measures on an underlying understanding of physio-chemical processes."*¹⁰

To summarize this point: the psychoanalytic technique is applicable to the neuroses, psychoneuroses, somatic complaints which are psychogenic in origin, certain criminal types, certain character difficulties, and social maladjustments which are neurotic in origin.

The time required to successfully complete an analysis deters many individuals who could be materially helped by such a procedure. An analysis lasts from six months to three, four and even five years. Many attempts have been made and many unorthodox innovations attempted to shorten this procedure. So far such a short-cut to success has proven impossible. These attempts have resulted in many of the misconceptions regarding psychoanalysis, as well as the establishment of new schools.

I can only state that the psychoanalyst should not deceive a patient either by attempting or promising that he can be analyzed successfully by any short-cuts, either through limiting the number of hours per week or by shortening the duration of the analysis itself. The time necessary to properly complete an analysis can only be determined by the process of the analysis itself. The duration of the treatment is dependent upon the depth of the neurosis and the unconscious fears which are presented as resistances during the treatment.¹¹ A neurosis does not develop in a day, a week, or a month—it is an ac-

cumulative process, and as such has to be disassembled layer by layer.

Obviously, then, the duration can only be tentatively prophesied in advance—and so far as is known today, the best and shortest analysis is the one which is correctly conducted by a properly trained analyst.

Regarding the cost:—the physician engaged in general practice sees a large number of patients at a moderate fee; the surgeon collects a comparatively large fee for individual operations; the analyst rents his time to his patients for a period of approximately fifty minutes a day to each individual case. This means that his practice is limited to seven, eight, or at the very most, nine patients. Contrary to the general belief, practically every private practicing psychoanalyst is treating one or more patients for almost nothing. Until the establishment of an organized, financially supported research program, practically all the research in this science was carried on by private practicing analysts who sacrificed a certain amount of their time for the purpose of furthering not only their and other analysts' knowledge, but that of every one interested in psychological understanding. In addition to this, patients sometimes become ill during an analysis and are not seen for indefinite periods of time, or a patient may have financial reverses so that it will become necessary to reduce his hourly fee—with the result that the earning capacity of the analyst is materially reduced. The nature of the work itself makes it necessary for the analyst to take vacations in excess of the physician who is not under the constant mental strain that the analyst must undergo.

If all these things are taken into consideration, and if it is realized how much time and money is spent by the analyst in attaining his objective, it is readily seen that the income of the average psychoanalyst is *not* excessive.

From what has already been stated, the reasons for the particular type of technical procedure employed in psychoanalysis becomes obvious, and some of the questions and suspicions become ridiculous. The technique employed is nothing more than the one found most suitable to the free expression of the patients' thoughts,

11. The external reality situation and particularly the cooperation of interested relatives and friends may obviously influence the duration in either direction.

10. Alexander—loc. cit.

the development of the so-called "transference neurosis" and an analysis of the transference neurosis itself. The soundproof room, the employment of a couch, the position of the patient lying on the couch and the analyst sitting behind, the prohibition against any interruption whatever, the complete confidential treatment of a patient's analytic material, etc., are not just technical hokum or mysterious hypocrisy but the result of long and careful observation into the method and procedure which will best serve the purpose for which the patient came for treatment—that is, the making conscious of unconscious tendencies, and the strengthening of the total personality, which will lead in the end to a cure, or at least improvement, in the patient's life situation.

Every analyst is seeking constantly to improve his technique, to eliminate every factor which will disturb in any way the progress of making conscious unconscious material, and is ready to evaluate and use, if practicable, any method which will shorten or in any way make easier for the patient or himself, the cure or improvement of mental illness. Obviously no psychoanalyst is going to waste either his own or a patient's time unless it is his belief the patient can be helped, made happier and better able to face reality situations in life.

The technique is just as applicable to men as to women and, with certain modifications, also to children. With children, who are much better able to express their unconscious tendencies in play rather than through verbalization, a technique has been developed by Anna Freud, Melanie Klein, and their students, which has proven highly successful.

The age limits for psychoanalytic treatment are open to question, and are based more upon the individual's psychological rather than actual age in years. Many patients past fifty have been successfully treated. The age limits therefore are a matter of judgment in individual cases, and to generalize is impossible.

In conclusion I would like to say just a word about the results of psychoanalytic treatment. It is very dangerous to apply statistics to therapeutic results along any line of medical or surgical endeavor without specifying concisely and clearly the types of cases studied. What often purports to be statistics represents only

misleading figures which prove nothing whatever.

Harold Hyman, in the August 1, 1936, issue of the *Journal of the American Medical Association*, under the title "The Value of Psychoanalysis as a Therapeutic Procedure," gives his statistics regarding certain therapeutic results in cases under psychoanalysis. Without any intention of discussing the paper as a whole, but merely to evaluate his remarks regarding statistics, I should like to point out that he refers to a small, isolated group of patients studied over a short period of time. Any such study must cover at least five, and preferably ten, years to be reliable.

The Berlin Institute in 1930 published a report showing the results of such a ten year investigation.¹²

It would be just as absurd to present statistics relative to the cure of cases of tumors, if such an investigation took into consideration only a limited number of patients without paying any attention to the location of malignancy of the tumor, time of the surgical interference, or the lapse of time following the operation. There are many types of tumors, just as there are many types of neurotic difficulties. Some tumors are much more malignant than others, some are more *amenable*, and some are more accessible to surgical interference than others. Obviously some cases are too far advanced, or for other reasons are inaccessible to surgical interference at all. Some tumor patients have other concurrent illnesses, while others do not. So it can be readily seen that any statistical study, to be of any value whatever, must be specified according to the different types, over a sufficient period of time, and such cases carefully followed for a sufficient period following the termination of their treatment.

The results of psychoanalysis are like any other form of medical treatment. Some cases are cured, others helped. Not always can the outcome be predicted at the outset (*viz.*, trial analytic period). However, with the indications well in mind, a psychoanalysis done by a competent analyst offers the best hope of successful therapy in the field of the psychoneuroses.

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12. See the Chicago Institute for Psychoanalysis Five Year Report, 1938.

MUSIC BECOMES A MEDICINE

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The ancient fathers were very wise in the ways of nature. They were acquainted with an astonishing variety of materials in the pursuit of health of mind and body. They early learned that music was one of the greatest of all healing forces. The priest-doctors of the Egypt of four thousand years ago had a favorite incantation in music which purported to have a favorable influence on the fertility of women. This incantation is still preserved in the most ancient of all Egyptian medical papyri.

The ancient Hebrews knew of the healing virtues of music and took advantage of it in several specific cases, perhaps the most famous being that of King Saul when his reason was tottering. "When the evil spirit from God was upon Saul, then David took up a harp and played with his hands. So Saul was refreshed and well, and the evil spirit departed from him."

Another ancient people, the Greeks, also knew the curative qualities of appropriate musical sounds. Homer even went so far as to say that it was music alone of all the means at the disposal of the surgeons which stopped the almost fatal hemorrhage which Ulysses suffered from.

The astonishing power of music to sooth the troubled mind and even to elevate the spiritual qualities of man was noted by Polbyius, who, speaking of a musical race of Arcadia contrasted the gentleness of their manners with the boorishness and cruelty of the Cynetes, who neglected the cultivation of music. Another Greek historian tells us that Clynetstra strayed from unsocial conditions through the persuasion of music. Terpander was said to have restored a rebellious and unreasonable people to their allegiance through his melodies. On the other hand, Tyrtæus, the Spartan, by certain verses which he sang to the accompaniment of flutes so inflamed the courage of his countrymen that they achieved a great victory over the Messenians to whom they had lost on several previous and musicless conflicts.

A similar incident is told by Plutarch in his biography of Solon. He tells us that the celebrated legislator succeeded in inciting the Athenians to invade and receive the Isle of

Salamis simply by singing a composition of his own. Another Greek, worthy of those times, Empedocles, is said actually to have prevented the murder of his father by playing on his lyre. And the fierce murderous temper of Achilles was allayed by music drawn from a lyre of great proportions, or more properly, a harp.

The harp later became a popular instrument to moderate unreasonable tempers. Damon by using the harp was said to be able to exert a calming effect on drunk-mad Grecian men about town. More ambitious was Asclepiades, who also with the harp was able to restore seditious armies to temper and reason.

The first really medical use of music was made by Zenocrates, Sarpander and Arion, who used music produced by a harp to curb the maniacal outburst of madmen. Celsus, one of the most illustrious of early Greek doctors, was an enthusiastic user of music instead of brutality to heal the insane. He pointed out different methods of influencing the minds of the insane, depending on the nature of their mania. "We must quiet their demoniacal laughter by reprimands and threats, and sooth their sadness by harmony, the sound of cymbals and other instruments."

While soft music may sooth, wild music may influence the susceptible. Antigenides, the tibicentist, had a most interesting experience in this connection. He played a very spirited air before Alexander the Great and so inflamed him that he leaped from his chair, drew his sword and began attacking those about him.

Music as a medicine was used when the occasion demanded. The Thebans used the flute for the alleviation of a great many diseases, which Galen called, "Super loco affecto tibia cavere." Martinus assures us that he was successful in removing fevers by song, and that Esculapius cured deafness by the sound of the trumpet. Allus Gellius is authority for the statement that a case of sciatica was cured by gentle modulations and the Phrygian pipe was generally recommended by several of the ancient philosophers as an antidote to sciatica.

Theophrastus, in his essay on Enthusiasm believed that the bites of serpents and other venomous reptiles were relieved by music, and again Plutarch is authority for the statement that Thelates, the Cretan, delivered Lacedaemonians from pestilence by the sweetness of his lyre. Similarly, Democritus was of the opinion that

the sound of the flute was a remedy for the plague which was a rather frequent occurrence in those days.

As time went on the remarkable powers of music received more careful attention. Its widespread influence on mind and body was noticed and appreciated by even the most casual observers. Napoleon is alleged to have attributed his defeat in Russia to the Russian winter and the Russian army music. The weird, barbaric tunes of "those monstrous Cossack regiments" incited the Muscovites to furious attacks in which they wiped out the best regiments of the French army. How many other similar incidents in which music played a deciding factor in military victory have not been recorded, but it is safe to say that the Napoleonic incident was not the only one.

It has previously been noted that Alexander the Great was particularly sensitive to musical stimuli. History had recorded several others who were similarly affected. One of these was observed by Claud le Jeune, the favorite musician of Henry III, who played a very spirited melody at a wedding "which so animated a gentleman who was present that he clapped his hands on his sword and swore that it was impossible for him to refrain from fighting with the first person he met; upon which Claude caused another air to be played, of a soothing kind, which immediately restored him to his natural temperament."

Some people are influenced by music to a much greater extent than others. A very interesting case was recorded by Dr. Chomet. This concerns a young musician, a native of Provence, France, who was very deeply affected by the music of the opera *La Vestale*, by Spontini. He went to hear this opera on many occasions and each time he was more fascinated by it. He finally became convinced that he had all the joys that it was possible to get out of life by simply listening to the divine music of Spontini. Having nothing more to live for, he committed suicide.

Less disastrously affected was the gentleman of Devonshire, England. Yet he was so profoundly moved on hearing a trio of Lampugnani's that he fell into a fainting fit which deprived him entirely of his speech and memory for an hour. Music usually had this effect on him, but he was so fond of it that he could not resist the temptation of hearing it. Some time after this he was

in London where he went to hear Dr. Arne's opera *Artaxerxes*. He stood up during the overture with some difficulty, but the first song so overcame him that he fell senseless over the back of his chair.

A very interesting instance in which the calming effects were put to practical test was that of Fillipe Palma, the singer, who was forever falling into debt. For this reason his house was continually besieged by creditors. One day an enraged creditor burst into the house and the singer at once realized that no soft words would have any effect. He therefore decided to try music. Accordingly, he sat down at the harpsichord and began to play a very soothing tune. In time the angry creditor was thoroughly pacified. It is also said that not only did the man free Palma from his obligations, but that he also provided him with money to pay off his other creditors, strange as it may seem.

A story somewhat similar, but far more interesting, is told of the Sultan Amurath, who, having laid siege to Bagdad and taken it, gave orders that some thirty thousand Persians were to be put to death, notwithstanding the fact that they had put down their arms. Among the supposed victims was a musician. He begged the officer in charge to spare him for but a moment that he might be permitted to speak to the sultan. The officer granted him this favor. He was brought before the sultan and was allowed to play a song. He played so eloquently that the sultan was brought round to his better nature, and as a result he countermanded the order for the massacre of the Persians.

Curative applications of music were made, as stated previously, in many abnormal conditions during a period of many years. Some two hundred years ago Drs. Bruckman and Hufeland reported cases of St. Vitus dance which were cured by music. Dr. Dessarts also maintained that catalepsy was cured in a like manner. Drs. Schneider and Beck ascertained the effects of music in hysterical and hypochondriac conditions and found them to be much benefitted. So widespread was the enthusiasm for musical therapy during the seventeenth century that a pretentious work appeared bearing the title *MAGS UNIVERSAL NATURAE ET ARTIS*, which contained bars of music reputed to cure persons bitten by a tarantula. As a matter of fact, the effectiveness of music in curing tarantula bites

was further affirmed by Dr. Mead in England, Dr. Burette, in France, and Dr. Baglivi in Italy. Their explanation of this phenomenon, which is quite reasonable, is that music throws the patient into violent fits of dancing, which by bringing on profuse perspiration, reduces the amount of poison in the body.

After the horrors of the plague which swept across Europe in 1374 a very curious dance was observed in Germany. This was known as the dancing mania. Entire communities joined hands, screamed and shook for hours on end until they dropped exhausted. It was thoroughly infectious and no medicine known at that time had any effect on it. Music was found to be the only means of checking it. The public authorities of certain towns gave orders that music should be played to the maniacal dancers. It was found that lively shrill tunes excited them even more. Soft, slow music seemed to have the desired effect and they were so calmed that they ceased to jerk and flounce about.

Among the oldest records of the Academy of Science at Paris is mentioned the case of an illustrious musician and composer who was attacked by continuous delirium which no drug of the *materia medica* could dispel. On the third day of his attack he asked if he might hear a little concert in his own room. Bernier's *Cantata* was sung. As soon as he heard the first notes his face relaxed from its nervous tension. His convulsions were gone in another hour. However, as the music ceased he relapsed. After ten trials of the same treatment a complete cure was effected.

The almost identical case of Philip V of Spain is even more famous. He suffered severely from fits of melancholia, which nearly ended in insanity. The court physicians tried in vain to cure him and as a last resort determined to try music. Farinelli, the famous castrato soprano and a former favorite of the unhappy king, was sent for to take part in this experiment. He was placed in an adjoining room to that in which sat Philip brooding in melancholic solitude. He sang a series of joyous songs. No result was perceptible on the first day, but, when the experiment was repeated, new songs being sung, and the hours of the audience extended, the king began to show signs

of returning interest. He listened and gradually became absorbed in the exquisite solo concerts. His interest grew daily. He became more discriminating, and, his attention once thoroughly aroused, his cure became rapid and permanent.

George II of England was also subject to terrible fits of melancholia and the only solace he received was from music. The king was well aware of the soothing effects on his nerves and mind, and would often ask for music when he sensed his melancholia coming on.

It was toward the end of the eighteenth century that any serious efforts to evaluate the effects of music on the human body were made. Among the first was Dr. Brocklesby, who conducted a series of interesting experiments on "W" a child less than two years old, born of musical parents, who was one day remarkable for mirth and good humor upon hearing sprightly airs of music. This gave occasion to the father and Mr. Stanley to try the effects of different measures, when they had raised the infant's spirit very high by these means. "But as the chromatic and the graver strains began, the child grew melancholy and sad, which temper was removed as soon as the pleasanter strain was played. Thus as I am informed they could solely by this art, raise and allay grief and joy in turns in this infant's mind."

Thousands of practical applications of music therapy have been made during the last two hundred years. The Guild of St. Cecilia, towards the end of the last century and the beginning of the present, organized curative concerts for asylums and hospitals with impressive results. Other similar societies engaged in identical work.

Some time ago Dr. Bechinsky, a Russian physician of note, attended a three year old child who was suffering from sleeplessness due to night terrors. He advised the child's mother to play one of Chopin's waltzes with most gratifying results.

At about the same time in France, Dr. Bourois de la Motte attended a young woman who for eighteen days had been suffering from a severe fever. Her pulse was extremely weak and her general condition was very unsatisfactory. On leaving the sick room one day the doctor saw a harp in another room, and it occurred to him to try the effects of music. A harpist was sent for, who played for half an

hour without any visible change in the state of the patient. He persisted, however, and ten minutes later the patient began to breathe more easily, the pulse became stronger, and after a nose bleed she began to speak, and became convalescent after a few days.

In time other physicians began to regard music as a good medicine and tried it in a variety of conditions. In 1893 Dr. Ewing Hunter, of Helensburgh, N. B., found that soft music successfully reduced high temperatures in several cases of fever, the greatest reduction being two degrees, from 101 to 99.

Dr. Wimmer, a few years earlier, describes the results of experiments with music conducted in an insane asylum. The piano was played for half an hour to 1,400 insane women. It was found that all responded to the rhythm. In some cases the pulse rate rose, others became restless and beat time. Melody without rhythm had no effect at all except when it happened to be an air which awakened memories. With slow music the worst cases were soothed and sometimes went to sleep. After several experiments it was noted that all showed improvement.

Two years ago Dr. J. A. McGlinn found that music was of distinct value in the operating room. Writing about his experiments in a prominent medical journal he had this to say:

"The advantages of music in the operating room are summarized as follows: 1. It creates a better atmosphere for all the patients coming to the theatre where it prevents the usual noises such as the jingle of instruments and basins and hiss of escaping steam, from being heard. 2. It diverts the attention of patients during operation under local and spinal anesthesia. 3. It relaxes the attention of the surgeon and the theatre staff during the operations. 4. It entertains the 'operating room force' during the arduous tasks of cleaning up after the day is finished."

Dr. McGlinn found that soft soothing melodious music is the type most acceptable to all patients. Tea music being supplied by a special self-playing automatic record changing instrument with a superior type of reproduction.

Music as a healing agent is appreciated as such not only among the so-called civilized races. Many visitors to Indian villages have been impressed with the custom of medicine-men of singing while administering their herbs. They believe that singing makes the herbs more effec-

tive. In fact, many tribes have medicine-men who dispense with herbs entirely and depend upon their vocal music to heal the patient.

Among the Chippewa Indians there is a song which contains the following incantation. "You will recover; you will walk again. It is I who say it. My power is great." This song was believed by many to restore a person to the use of his legs.

Among the Yuma Indians the medicine-men sing at least four songs before he is expected to obtain any relief from his patient. It is only after the fourth song that the patient begins to experience any relief.

The Sioux medicine-man has a more elaborate music-medical system. He has a song for almost every known ailment—a song to cure headaches, one for children's ailments and another for setting a fractured leg. The Papago Indians of Arizona also have a similarly elaborate musical curing treasurehouse. It is their belief that healing songs are given by certain birds and animals.

The Indian medicine-man of almost every tribe has a standardized regime. He sings his song four times after which there is a pause. Then, if necessary, the song is repeated four more times. While he sings he beats a drum or shakes a rattle which has not a little power in energizing the patient exhausted from disease. The Indians are masters of rhythm, and they realized years ago that rhythm is one of the most powerful means of influencing the human body.

Music has emerged as one of the most pleasant of all curative agents. Modern science with its exact methods of measuring psychological activities is daily confirming what many suspected for a great many years, that music exerts a most profound influence on almost every organ in the human body.

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Cevitamic acid added to the medium on which tubercle bacilli are growing changes the characteristics of growth. There is no associated alteration in the virulence of the organisms. Heise, F. H., & Steenken, W., *Ann. Int. Med.* 11:1039, 1937.

Cevitamic Acid produces an increased responsiveness to insulin in diabetics, probably due to increase in capacity of the liver to assimilate glycogen or to an increase in tissue metabolism. The customary diabetic diet tends to favor vitamin C deficiency. Pfleger R., & School, F., *Wien. Arch. f. inn. Med.* 31:219, 1937.

LABOR IN JUSTO MINOR Pelves

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When pregnancy occurs in the generally equally contracted (justo minor) pelvis, the attending physician usually speculates as to the ultimate outcome, and especially as to what procedures may be required when labor occurs.

We know that during labor in the justo minor pelvis, with a baby of average weight and size, we may expect much configuration or moulding of the baby's head before expulsion occurs and that this as a rule, causes a prolonged labor.

The head should be perfectly flexed during labor in order to facilitate progress. If it is found to be deflexed this, indeed, is a bad omen.

Due to the many complications which may occur in these cases and the fear which some physicians have in the use of forceps' deliveries, there has been a tendency to seek the quicker and often easier way out by resorting to Cesarean section, without having a positive indication for such a procedure.

Having had several cases of labor in justo minor pelves, all terminating favorably for both mother and child by the use of forceps, it is my desire in this article to stress the fact that in this class of cases it is much wiser to adhere to our older concepts of the management of labor in the justo minor pelvis and give labor a trial. I believe that most of these cases can be terminated by the use of forceps and with a lower mortality rate for both mother and child, than the resort to Cesarean section.

The mechanism of labor in the justo minor type of pelvis as it usually occurs is as follows: The head enters the brim of the pelvis in one of the greater or oblique diameters, being greatly flexed, with the small fontanelle deep in the center of the pelvis. The large fontanelle cannot be outlined. This position is of course the most favorable one for the passenger as regards the passages to be traversed, and the physician should be sure that the head is not in a deflexed position, for if such is the case labor does not, as a rule, progress.

I believe that in all cases of this nature the patient should be in bed from the beginning of labor so as to try and preserve the bag of waters and prevent any possibility of prolapse of the cord or mal-positions as it is well known that

such conditions occur much more frequently in these cases.

I believe that if the physician is reasonably careful in his examinations before the expected date of confinement, using our known methods which show whether the head will enter the pelvis; taking an x-ray picture a week or two before term to note the pelvic contours and fetal relations; noting that labor does not go beyond the expected term, that labor, in the great majority of cases, will progress by the engagement and full dilation of the cervix, so that the final stage of labor can be terminated by the use of forceps under an anesthetic of which my preference is ethylene anesthesia.

Following is the report of a recent case:

Mrs. J. S., from Kennett, Missouri, aged 24 years—primipara.

This patient first came under my observation August 3, 1937. The expected date of confinement being about October 1, 1937. She desired to stay in Chicago, living with relatives until after her confinement, when she would return home.

The general physical examination showed a young woman of short stature, her height being 4 ft. 10 in. Otherwise no pathological condition was disclosed.

The laboratory report showed Wassermann and Kahn blood test negative. The urine gave sp. gr. 1010—no albumin, sugar, acetone or bile. The microscopical examination was negative. The blood gave 3,500,000 red corpuscles per cu. mm. Hemoglobin 70%. White corpuscles 11,000 per cu. mm. The pelvic measurements showed a generally equally contracted pelvis (justo minor) as all the measurements were below the average.

MEASUREMENTS:

The inter-spinous diameter.....	22 cm.
Intercristous diameter	24 cm.
Bi-trochanteric diameter	27 cm.
External conjugate diameter.....	18 cm.
External oblique diameter, left.....	20 cm.
External oblique diameter, right.....	20 cm.
Circumference	80 cm.
True conjugate, about 9.5 cm.	
Anterior posterior diameter of outlet, about 9 cm.	

An x-ray picture taken September 15, showed a well-shaped pelvis with no apparent abnormal ties.

Trying the Hillis impression test, i.e., to determine whether the fetal head would pass the inlet, I felt that the head would in all probability pass with considerable moulding when the expected time for labor should arrive.

So I decided I would try simple measures to bring on labor a week before the expected time and if these failed I would wait the expected time, although I would not allow the date for the occurrence of labor to extend beyond this time, which was determined to be October 1, as delivery with too large a baby via the natural passages in such a pelvis would, I knew, result disastrously. Previous cases in justo minor

pelves had proven to me that by frequent examinations I could as a rule manage the case properly and deliver the baby easily via the natural passages, by the use of forceps after engagement occurred.

At two o'clock in the afternoon I began using simple measures by giving the patient $1\frac{1}{2}$ ozs. of castor oil and 10 grs. of quinine sulphate, after which 5 grs. of quinine sulphate were given at hourly intervals until five doses had been administered. A warm enema was given at 6 P. M., also pituitrin 5 minims of obstetrical strength which was repeated within an hour.

During the night the patient had a few rather severe uterine contractions, so next morning I decided to give a few small injections of pituitrin and if possible start labor. Three injections of 5 minims of obstetrical pituitrin were instituted at hourly intervals which caused fairly severe uterine contractions at long intervals, which after a few hours entirely subsided—whereupon I decided to wait for labor to take its course.

On October 2, 1937, labor started and the patient entered the hospital. The membranes ruptured after about four hours of fairly severe uterine contractions occurring at regular intervals of every few minutes. Examination showed the position of the baby to be an occiput to the right and anterior with slight deflexion of the head. The deflexed position was remedied, labor thereafter progressing slowly until engagement occurred.

The patient had now been in labor for some twenty-four hours, during which time she received $1\frac{1}{2}$ grs. of nembutal when the uterine contractions were at five minute intervals and three hours later $\frac{3}{4}$ gr. dilaudid hypodermically, neither of which seemed to interfere with the progress of labor as the head was not engaged when the latter was given—engagement occurring three hours later.

When engagement occurred the pains almost subsided. After an hour's duration an episiotomy was done and the patient was delivered with forceps of a child weighing 7 lbs. 2 ozs. There was considerable moulding of the head and a slight mark caused by the forceps which has since disappeared.

An uneventful recovery ensued and the patient left the hospital on the tenth day.

My conclusions are: That Cesarean section is seldom indicated in generally equally contracted pelves of relative contraction.

4707 Broadway.

GIVE US LIBERTY

Judge William I. Ransom said: We cannot be ready to accept the idea that government must have the power to do anything it sees fit to the individual citizen and his rights and liberties.

IF YOU WEAR GLASSES

Office workers are often annoyed during warm weather by having eyeglasses become blurred from steam forming on the lens. Wiping with a clean cloth dipped in glycerine will make for clearer vision.

THERAPY OF GAS GANGRENE WITH REPORT OF CASE

W. C. KENNEDY, M. D.

EFFINGHAM, ILLINOIS

Amputation for the treatment of gas gangrene is only mentioned to be condemned.

Serums value is still under discussion. The reports indicate its value. In a report by M. T. Bates¹ 16 cases without serum had a mortality of 50% while 16 cases with serum had a mortality of 18%.

Transfusion of blood and maintenance of adequate water and electrolyte balance are here of unquestionable importance.

X-rays in treatment as reported by J. F. Kelly and D. A. Dowell,² on 56 cases give a mortality of 8.9% in desperately ill cases. The principles involved in x-ray therapy are, 1st, raising of tissue resistance, 2nd, blockade of lymphatic channels and 3rd, modification of the virulence of the organisms. Treatment should be instituted at first suspicion of disease and given twice daily for at least 3 days. Ample voltage to insure penetration should be given—to an extremity 90-100 K V with 1 MM a¹ filter and 130-160 KV with increased filtration to trunk, approximately 100 r per treatment over each area.

Sulfanilamide. H. R. Bohlman.³ Reports 3 cases with no mortality and believes the drug has a specific effect on gas bacilli although symbiotic growth with the streptococci being checked may give these results. This drug merits further use till sufficient cases have been tested to prove or disprove its value.

REPORT OF CASE

An 18-year-old white healthy male, while hunting, received the full charge of a 12 gauge shot-gun with No. 7½ shot in left leg just below knee. He was taken to neighboring town, where, without any apparent attempt at debrident or cleansing, the wound was tightly packed with gauze to control hemorrhage. Thirty-six hours later, due to dissatisfaction, the boy was transferred to another town, and came under my care. The boy's condition was critical: his temperature 104°, his pulse 140, he was semi-comatose and delirious. Under light cyclopropane anesthesia, the wound was dressed; shot, bits of clothing, the gun wadding and large fragments of bone were removed from the wound. After thorough cleansing, the wound edges debrided and washed out with peroxide, wound lightly packed with gauze and splint applied to leg. Gas B. serum and T.A.T. was administered. A transfusion of 500 c.c.

of whole blood was given. The entire extremity below the site of injury was cold, dark, blue in color and frank gas was noted in the tissues with definite bubbling and crepitation. Cradle and light were applied in hopes enough blood supply might be left to save the extremity, but by the second day it was evident that the leg was lost—not due to the gas gangrene, but entirely due to loss of blood supply—so after a 500 c.c. blood transfusion a guillotine amputation was performed. It should be definitely understood, however, that gas bacillus infection is not an indication for amputation—quite the contrary in fact, and that this amputation was of an already dead member, absorption from which was definitely prejudicial to the patient. Sulfanilamide was started in full doses the 1st day as was x-ray therapy. By the 4th day the patient's temperature and pulse were reduced and he was definitely out of danger and recovery was rapid. On the 10th day another 500 c.c. blood was given; on the 16th day the stump was revised and patient left hospital on the 28th day completely healed.

SUMMARY

In these severe infections all possible aid to recovery should be utilized and the points to be brought out are:

1. Conservative surgery — amputations are definitely contraindicated.
2. X-ray therapy grossly reduces mortality.
3. Sulfanilamide seems to be of definite value.
4. Serum both prophylactically and in treatment, while not certainly of value, should be tried.
5. Blood transfusion and adequate fluid and electrolytic balance must be maintained.

BIBLIOGRAPHY

1. Bates, M. T.: *Am. Surg.*, 105: 257-264, 1937.
2. Kelly, J. F., and Dowell, D. A.: *J. A. M. A.*, 107: 1114-1117, 1936.
3. Bohlman, H. R.: *J. A. M. A.*, 109: 254-256, 1937.

CIRRHOSIS OF LIVER IN ITS EARLY STAGES

Thomas P. Sprunt, Baltimore (*Journal A. M. A.*, Dec. 11, 1937), points out that in spite of increased knowledge of physiologic chemistry, the most valuable clinical data for the diagnosis of hepatic diseases are still to be obtained by a painstaking clinical history, a careful physical examination and other relatively simple methods of bedside observation.

PREVENTION AND MODIFICATION OF MEASLES

Pending the development of better methods of control, Charles F. McKhann, Boston, (*Journal A. M. A.*, Dec. 18, 1937), believes that passive immunization with human immune bodies of children after they have been exposed to measles would appear to present the most useful procedure in the prevention or modification of the disease.

Society Proceedings

CHICAGO MEDICAL SOCIETY

PUBLIC LECTURE

Sunday, February 20, 1938, 8:30 P. M.

GOODMAN THEATRE

"YOU AND YOUR BLOOD PRESSURE"

Dr. N. C. Gilbert

Professor of Medicine, Northwestern University
Medical School

Wednesday, March 2, 1938

PROGRAM

"The Mechanism of Anemias"—Dr. Russell L. Haden,
Cleveland Clinic, Cleveland, Ohio.

Discussion—Walter W. Hamburger, Howard Alt,
Leo Campbell, Josiah J. Moore.

Marriages

LEO RALPH BROWN to Miss Leha Isadora Cohn, both of Chicago, in East Chicago, Ind., Oct. 10, 1937.

LINDLEY L. BUFKIN to Miss Irene Johnson, both of Wenona, Ill., Dec. 26, 1937.

Personals

Dr. Bert I. Beverly addressed a public meeting in Springfield, February 23, on "Mental Hygiene and What the Community Can Do About It."

Drs. Don C. Sutton and Paul S. Rhoads presented a program on "Pneumonia," before the Henry County Medical Society at Kewanee, February 10. Dr. Sutton discussed "Diagnosis of Pneumonia," and Dr. Rhoads, "Serum Treatment of Pneumonia."

Dr. Carlo S. Seuderer spoke on "Orthopedic Surgery," before the Kankakee County Medical Society at Kankakee, February 10.

Dr. Perry J. Melnick has been granted a fellowship by the National Advisory Cancer Council for training in diagnosis and treatment of cancer. Last September he received the Third Award at the International Congress of Radiology for his researches in the radiobiology of tumors.

Dr. Frank F. Maple gave a paper on "The Contraindications to Caesarean Section" before the doctors of Jasper, Crawford and Lawrence Counties at Lawrenceville, February 15.

Dr. Channing W. Barrett addressed the Marion County Medical Society at Centralia, Feb-

ruary 17 on "Fibroids and Their Complications, When Surgical and When to Be X-Rayed."

Dr. Italo F. Volini addressed the Will-Grundy County Medical Society, February 16, on "Pneumonia."

Dr. A. J. Kobak spoke on "Toxemias of Pregnancy," and M. P. Borovsky on "Infant Feeding" at a meeting of the doctors of Iroquois-Ford Counties.

Dr. Robert A. Black addressed Will-Grundy County Medical Society at Joliet, February 23.

Dr. Lloyd Arnold gave a talk on "Principles of Public Health Administration," before the Health Chairmen of the Chicago District of the Illinois Federation of Women's Clubs, February 14.

Dr. Paul H. Harmon, Chicago, addressed the Adams County Medical Society on February 14, on the subject, "The Illinois Plan for the Care of Crippled Children."

Dr. A. M. Harvey, formerly with the Crane Manufacturing Company, Chicago, is wintering at Long Beach, California. He expects to return to Chicago about May 1.

Dr. Carolyn N. MacDonald discussed "Syphilis with Its Prenatal Influences" and Minnie S. Oboler Perlstein "Syphilis with Special Reference to Treatment," before the Chicago Council of Medical Women February 4.

Dr. George B. Eusterman, Rochester, Minn., addressed the Sangamon County Medical Society in Springfield, January 6, on "Gastro-Intestinal Disorders; Important Advances in Diagnosis and Therapy."

A symposium on diseases of the heart was presented before the Macoupin County Medical Society in Carlinville, January 25 by Drs. Patrick B. O'Connell, Gillespie; Joseph J. Grandone, Gillespie, and Dr. Arthur D. Wilson, Carrollton.

Dr. Vivean V. Wood, St. Louis, discussed otolaryngology before a meeting of the Sangamon County Medical Society, Springfield, February 3, and Dr. Gottfried Koehler, Springfield, gave a demonstration of the audiometer.

Drs. Cecil S. O'Brien and James H. Allen, Iowa City, discussed "Staphylococcus Conjunctivitis" before the Chicago Ophthalmological Society at its recent annual meeting; Dr. Georgiana M. D. Theobald, Oak Park, Ill., was chosen president.

At a joint meeting of the Madison County medical and bar associations in Alton, February

10, Dr. Rollo K. Packard, Chicago, president of the state medical society, and Mr. John F. Voigt, Chicago, president of the state bar association, spoke on the Constitution.

Dr. Harry Culver, Chicago, discussed "Surgical Treatment of Bladder Neck Construction," and "The Newer Urinary Antiseptics," before the Rock Island County Medical Society February 8; Dr. William H. Myers, Coal Valley, spoke on "Technics Found Useful in Surgery of the Biliary Passages."

Dr. A. J. Carlson, Professor of Physiology, University of Chicago, addressed the McLean County Medical Society, February 8, on the subject "The Physiology of Hormones."

Dr. Robert E. Cummings addressed the Porter County Medical Society at Valparaiso, Indiana, February 15, on "The Acute Abdomen in Children."

Drs. A. F. Kanter and Alwin C. Rambar presented a program at the February 7 meeting of the Hancock County Medical Society on "Difficulties of Obstetric Diagnosis," and "Care of the Premature Infant."

Dr. Edward F. Dombrowski addressed the Auburn Park Lion's Club, February 2, on "Metrazol and Insulin Therapy" and "The Value of Mental Health."

Again on February 10, he gave a talk on "Mental Hygiene and Treatment of Mental Patients in State Institutions" at Division Street Branch Y. M. C. A.

A joint meeting of the Chicago Roentgen Society and the Chicago Tuberculosis Society was addressed by Drs. John B. Barnwell, Ann Arbor, Mich., on "Roentgenologic Changes Seen in Patients with Tuberculous Tracheobronchitis" and William E. Anspach, "Transphrenic Infection in Children."

Carl G. Hartman, Ph.D., research associate, department of embryology, Carnegie Institution and Johns Hopkins University School of Medicine, Baltimore, delivered the Charles Sumner Bacon Lectures at the University of Illinois College of Medicine, February 18-19. His subjects were "Physiology and Control of Menstruation" and "Physiology and Control of Ovulation."

The Chicago Society of Internal Medicine was addressed February 28 by Drs. Samuel C. Robinson on "What is Normal Blood Pressure: An Analysis of 10,000 Cases"; Dr. Allan T. Kenyon, Irene Vanderford, Ph. D., Dr. Albert Hughes

Bryan, Miss Kathryn Knowlton and Fred C. Koch, Ph. D., and Dr. Wilhelm Dressler, Vienna, Austria, "Cardiology."

Dr. Stephen Walter Ranson, professor of neurology, Northwestern University Medical School, and Dr. Arthur E. Hertzler, professor of surgery, University of Kansas School of Medicine, Kansas City, Kan., were guests of honor at an informal dinner, February 15, given by Theta of Phi Beta Pi. The dinner was held before the annual Stephen Walter Ranson Lecture, which was delivered by Dr. Hertzler; his subject was "The Thyroid Heart."

The Chicago Pediatric Society was addressed January 18 by George E. Axtelle, School of Education, Northwestern University, "The Organic Theory of Mind and Its Bearing on Education"; Carleton Washburne, superintendent of Winnetka public schools, "The Living Philosophy of Education," and Dr. George D. G. Campbell, assistant clinical professor of psychiatry, Rush Medical College, and psychiatrist to the health service, University of Chicago, "Neurolinguistic Factors in Child Development."

News Notes

—The fourteenth Ludvig Hektoen Lecture of the Frank Billings Foundation of the Institute of Medicine of Chicago was delivered by William C. Rose, Ph. D., professor of biochemistry, University of Illinois, February 25 at the Palmer House. The title of the lecture was "The Physiology of Amino Acid Metabolism."

—At a meeting in Springfield, January 3, the Council of the Illinois State Medical Society voted to organize the "Fifty Year Club" for any member of the society "who graduated fifty years ago, and those physicians, not active society members, who have practiced fifty years and are recommended by their local county medical society." A special file of these men will be maintained by the society and gold emblems will be issued. Since the council took this action, about fifty-six medals have been presented in twenty-nine counties and plans are under way in other counties to make the presentation.

—Dr. Walter C. Alvarez, Rochester, discussed "Useful Hints in the Treatment of Indigestion" before the Aux Plaines Branch of the Chicago Medical Society, January 29. The South Chicago Branch was addressed January 25 by Drs. David

S. Hillis and Philip A. Daly on "Indications for Forceps" and "The Heart in Pregnancy." Dr. George G. Ornstein, New York, discussed "Pathogenesis of Tuberculosis and Its Prognostic and Therapeutic Implications," before the North Shore Branch February 1 and Dr. Pol N. Coryllos, New York, "Some of the Newer Aspects of Surgery of the Chest." At a meeting of the North Side Branch February 3 Drs. Oswald H. Robertson spoke on "Lobar Pneumonia, with Special Reference to Serum Therapy," and Paul S. Rhoads, Evanston, Ill., "Treatment of Upper Respiratory Infections." Dr. Anthony J. Linowiecki, as the after dinner speaker, discussed "Some Impressions of Medical Practice in Russia and Poland."

—Smallpox is on the warpath in Illinois. Traveling from one locality to another it appears to be searching successfully for the unprotected—those not vaccinated who have never had the disease—in every community. Troublesome outbreaks have developed in about one-third of the counties widely distributed throughout the State. While a sweeping epidemic is improbable, the disease is now more prevalent than at this date in any previous year since 1930. To date 246 cases have been reported this year.

A person can be vaccinated for a dollar or two. Every smallpox patient must be quarantined for at least three weeks. Thus the victims of smallpox have spent an aggregate of more than 5,000 days in quarantine already this year, to say nothing of medical and nursing expense, disruption of school programs, upsetting of social activities and the loss of business.

—The Charles S. Bacon Lectures for 1937-1938 were delivered, February 18-19 by Dr. Carl G. Hartman, of Johns Hopkins University and Carnegie Institution of Washington, in University of Illinois College of Medicine. The subjects were "Physiology and Control of Menstruation," and "Physiology and Control of Ovulation."

—Phi Beta Pi Medical Fraternity is sponsoring a series of lectures which has been dedicated to the memory of Dr. Carl A. Hedblom, professor and head of the department of surgery, University of Illinois College of Medicine. The first of these annual lectures was delivered February 16 at the college of medicine by Dr. Evarts A. Graham, Bixby professor of surgery, Washington University School of Medicine, St. Louis, who

discussed "Some Accomplishments in Chest Surgery." Dr. Hedblom died in 1934.

—The psychiatric institute of the municipal court of Chicago handled more cases in 1937 than in any previous year since its establishment in 1914, 2,352 in 1937 against 2,183 in 1936. There were 701 patients certified to the psychopathic hospital as insane; of 117 persons adjudged feeble-minded, sixty-four were sent to the Lincoln state school and forty-nine to the Dixon state hospital and four to the Illinois Security Hospital; 314 patients were sent to the psychiatric clinics of the university medical schools. Dr. David B. Rotman is director of the clinic.

—A series of clinics are being held by the State Department of Health and the Samuel Deutsch Serum Center, Chicago, to obtain convalescent serum to combat the current near-epidemic waves of scarlet fever and measles in Illinois, according to a release from the state department. Clinics have already been held in Peoria January 27, Hillsboro February 1 and Quincy February 3. Others will be held at Moline, Kewanee, Elgin, Alton, Springfield and other places. Healthy persons more than 14 years of age who have recently recovered from measles or scarlet fever are acceptable as donors, each of whom will be paid \$5. Four fifths of the serum will be retained by the Samuel Deutsch Serum Center at the Michael Reese Hospital, Chicago, where any physician of the state can obtain either measles or scarlet fever convalescent serum at cost. The remaining fifth will be left for free local use in each community where the clinic is held. About 400 new cases of measles and about 100 of scarlet fever are being reported daily in the state, and indications are that both will continue at a high prevalence level for several weeks.

Deaths

GEORGE FRANK ALLEN, Aurora, Ill.; Rush Medical College, Chicago, 1880; aged 82; died Nov. 7, 1937, of aplastic anemia.

JOHN EARL BLACK, Centralia, Ill.; Loyola University School of Medicine, Chicago, 1927; member of the Illinois State Medical Society; aged 42; on the staff of St. Mary's Hospital, where he died, Dec. 28, 1937, of appendicitis and chronic myocarditis.

LILLE FORREST CHAPMAN, Woodhull, Ill.; Loyola University School of Medicine, Chicago, 1919; aged 45; died, Nov. 16, 1937, of heart disease.

ALFRED H. CHURCHILL, Oswego, Ill.; Northwestern University Medical School, Chicago, 1899; aged 64; died, Nov. 27, 1937, of amyotrophic lateral sclerosis.

JAMES RICHARD EARLE, Chicago; Rush Medical College, Chicago, 1906; served during the World War; formerly connected with the U. S. Public Health Service, reserve; aged 58; was found dead, Nov. 18, 1937.

ORVILLE LOGAN EDWARDS, Roodhouse, Ill.; Rush Medical College, Chicago, 1914; member of the Illinois State Medical Society; served during the World War; formerly member of the city council, and for many years president of the community high school board of education; aged 51; died suddenly, Nov. 23, 1937, of heart disease.

THOMAS JEFFERSON LAMBERT, Aurora, Ill.; Jenner Medical College, Chicago, 1906; member of the Illinois State Medical Society; aged 68; died, Nov. 13, 1937, of heart disease.

JAMES HARVEY LYON, Chicago; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1878; aged 84; died, Nov. 26, 1937, in Evanston, Ill. of arteriosclerotic heart disease.

DAVID CUMMINS MEBANE, Evanston, Ill.; University of the City of New York Medical Department, 1883; formerly a druggist; at one time member of the city council of Wilkes-Barre, Pa.; aged 81; died, Nov. 16, 1937, of carcinoma of the stomach.

LOUIS JACOB PRITZKER, Chicago; Northwestern University Medical School, Chicago, 1891; a Fellow, A.M.A.; instructor of gynecology at his alma mater from 1905 to 1910; professor of obstetrics at the Jenner Medical College from 1913 to 1918; served during the World War; for many years on the staffs of the Norwegian American Hospital and the Grant Hospital; aged 69; died, Nov. 5, 1937, in a hospital at Kenosha, Wis., of coronary thrombosis.

WALTER CHADWICK SEARS, Chicago; University of Vermont College of Medicine, Burlington, 1899; member of the Rhode Island Medical Society; aged 68; died, Nov. 5, 1937, in Evanston, Ill., of carcinoma of the stomach.

CHESTER C. SLOAN, Moline, Ill.; University of Pennsylvania Department of Medicine, Philadelphia, 1904; a Fellow, A.M.A.; on the staffs of the Lutheran Hospital and Moline Public Hospital; aged 60; died, Nov. 17, 1937, of heart disease.

FRANK J. TARABA, Chicago; College of Medicine and Surgery, Chicago, 1910; a Fellow, A.M.A.; on the staffs of the Edgewater and American hospitals; aged 53; died, Nov. 22, 1937, of cerebral embolism.

FRED CAMPBELL TURLEY, Alton, Ill.; Vanderbilt University School of Medicine, Nashville, Tenn., 1931; formerly a first lieutenant in the U. S. Army; on the staff of St. Louis Children's Hospital; aged 30; was found dead in bed, Nov. 5, 1937.

DAVID R. WILKINS, Pocahontas, Ill.; Missouri Medical College, St. Louis, 1878; past president of the Bond County Medical Society; formerly mayor of Pocahontas and school treasurer of Burgess township; for many years secretary of the Board of U. S. Examiners for Bond County; aged 82; died, Nov. 22, 1937, of arteriosclerosis and arthritis.

JUSTIN CLEMENTS WILLIAMS, Chicago; Northwestern University Medical School, Chicago, 1925; a Fellow, A.M.A.; aged 41; died, Oct. 10, 1937, in Oak Park, Ill., of bacterial endocarditis.

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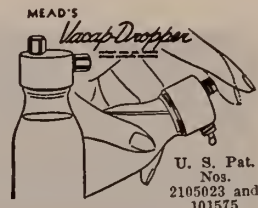
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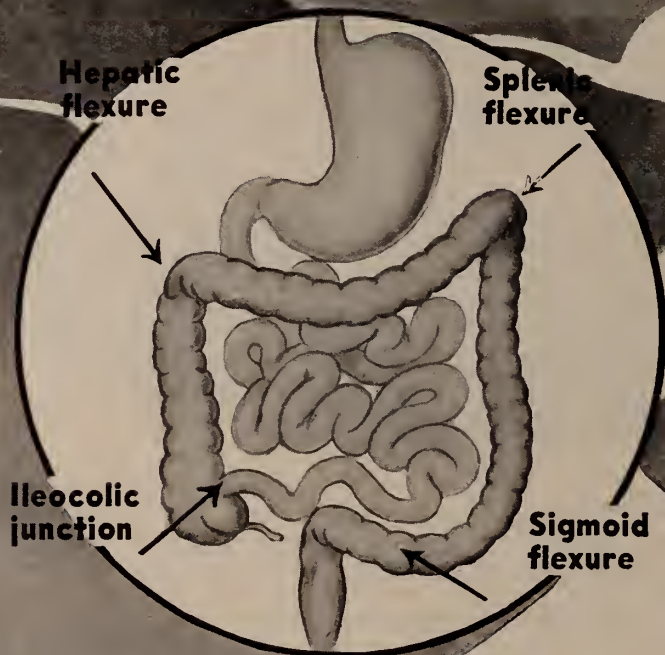
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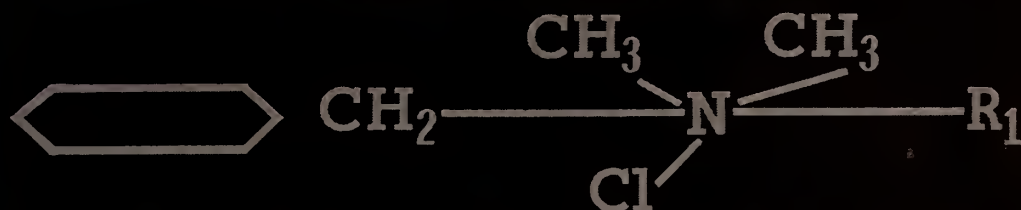
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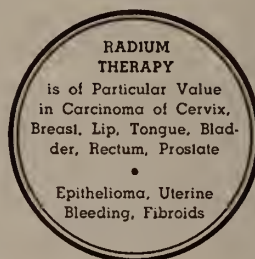
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Book Review

Professor of Clinical Surgery, University of Kansas School of Medicine, Kansas City, Kansas; Associate Professor of Oral Surgery, Kansas City Western Dental College, Kansas City, Missouri. 807 pages with 334 illustrations. Philadelphia and London: W. B. Saunders Company, 1938. Cloth, \$10.00 net.

In this work the author touches with considerable emphasis upon the diagnosis of ordinary surgical conditions encountered in every day practice. This work should prove of immense value to the dental student, the medical student, the general dentist and physician and the surgeon. There is much material in this work that is of interest to special practitioners such as "the nose and throat" specialist, the dermatologist or the radiologist who see conditions which in many instances overlap their field into that of oral surgery.

ESSENTIALS OF PRESCRIPTIVE WRITING. By Cary Eggleston, M. D., Assistant Professor of Clinical Medicine, Cornell University Medical College, New York City. Sixth Edition, Revised. 155 pages. Philadelphia and London: W. B. Saunders Company, 1938. Cloth, \$1.50 net.

In this eleventh edition there has been many revisions. These revisions are limited largely to changes in official nomenclature, to the omission of some older preparations and to the inclusion of certain new ones.

FEVER THERAPY. College of Physicians and Surgeons, Columbia University, New York City. March 29, 30, 31, 1937. Edited by the members of the American Committee. New York. Paul B. Hoeber, Inc., 1937. Price \$5.00.

This work is made up of abstracts and discussions of papers presented at the first international conference on fever therapy.

LOVE AND HAPPINESS. Intermate problems of the Modern Woman with a Prefatory note by Dr. Logan Clendening. New York & London: Alfred A. Knopf. 1938. Price \$2.00.

MALNUTRITION THE MEDICAL OCTOBUS. By John Preston Southerland, M. D. Boston. Meador Publishing Co. 1938. Price \$3.00.

This new work deals with vital food facts, from the standpoint of nature's revelations.

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mentioned as first and most important, "Prenatal Life"; "Is Milk a Perfect Food?"; "Weaning and Its Perils"; "Why the Modern Mother Cannot Nurse Her Children"; "Dentition, Normal and Defective"; "The Injurious Possibilities of Pure Food"; "Tuberculosis in Cattle, a Lesson for Mankind"; "The Unlearned Lesson of Beri-beri"; "A Few Thoughts on Vitamins"; "The Sugar Problem"; "The Meatless Diet"; "Constipation and Its Curative Treatment"; "Man's Chief Dietetic Transgressions"; "The Prevention of Cancer"; et cetera: all practical and vital subjects and all discussed in a simple, understandable way without unnecessary verbiage.

The author's presentation of his subject is logical and scholarly, and merits careful reading and consideration.

MACLEOD'S PHYSIOLOGY IN MODERN MEDICINE. Edited by Phillip Bard. Eighth Edition. St. Louis: The C. V. Mosby Company. 1938. Price \$8.50.

This work has gone through eight editions in rapid succession which shows an increasing demand for the work. Little of the former edition remains. The greater part of the book has been entirely rewritten. The original purpose of this work was to serve as a guide to the clinical application of physiology and biochemistry. The present volume makes no pretense of being a text book of "applied physiology." Although it devotes as much attention to clinical data as any of its immediate predecessors. Many of the notable contributions of the clinic to the development of physiology have of course been included.

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The subject matter appears to have been carefully selected and conservatively presented, and it repeatedly reproduces the attitude of the Council on Pharmacy and Chemistry toward the clinical use of the vitamins in certain pathologic states. With a frankness that is commendable, negative reports are cited without bias, leaving, as should be done, the choice of therapy strictly with the physician.

The book is not cluttered with extensive reports of animal nutrition experiments and deductions of possible clinical applications. Conservative clinical data are cited, whenever possible to show what may be expected therapeutically from the administration of the different vitamins. There is no historical section but the chemistry of the vitamins is very briefly outlined.

The manufacturer does not state under what terms the book is available, so it must be inferred that any physician who is interested need only write to the firm to obtain a copy. The opportunity to secure so much useful information, so handily compiled, is relatively infrequent.

A TEXTBOOK OF HEMATOLOGY. By William Magner, M. D. Philadelphia. P. Blakiston's son & Company, Inc. 1938. Price \$4.50.

This work contains three charts, three colored plates, 23 text illustrations, 395 pages.

The author has had many years experience as a hospital pathologist and as a teacher. The book presents a balanced account of the theory and practice of hematology to serve the needs of practicing physicians, students, laboratory workers and teachers of medicine. Normal and abnormal hemopoiesis, the structure and functions of the bone marrow, the etiology of the blood dyscrasias and the clinical and laboratory aspects of disorders of the hemopoietic system are described fully but concisely. The book offers a complete account of modern hematology and is written in an easy and lucid style.

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Ammonium mandelate in a daily dose varying from 3 to 8 grams administered to 40 children with pyuria was successful in controlling urinary infection in 80 per cent. Failure is usually due to gross anatomic defects of the urinary tract or advanced kidney disease. Wheeler, W. E., *New England J. Med.* 217:643, 1937.

Asthma may have a psychic background even when the allergic diathesis is present. Allergic patients who live in conditions of extreme emotional strain may develop the syndrome; and asthma in an allergic subject may be part of a general anxiety state, an autonomous reflex outlet for emotion bottled up at high pressure. *Annot. Brit. M. J.* 2:1283, 1937.

A comparative clinical study covering 943 five-year-old children shows the incidence of rickets to be 90 per cent as exhibited by three or more signs of the disease. Eighty per cent of those children had received medicinal antirachitic treatment. The incidence of rickets was as high in sunny southwestern cities as in the cloudy northwestern location. Moore, *et al.*, *Am. J. Dis. Child.* 54:1227, 1937.

Gastric Lavage followed by examination of the sediment for tubercle bacilli by Ziehl-Neelsen stain, culture and guinea-pig inoculation shows 55 per cent of patients with negative sputum to be excreting tubercle bacilli. "In view of these surprising results, the borderline between 'open' and 'closed' tuberculosis is now obliterated." Gullbring and Levin, *Acta Med. Scandinav* 93: No. I-II, 1937.

Pitressin used for gas shadows in 1000 cases receiving roentologic examination of the abdomen, has proved to be a useful procedure. It is particularly useful in cholecystography where small gas pockets may be misinterpreted as stones. Kenning, J. C., & Lofstrom, J. E., *Am. J. Roentgenol.* 37: 28, 1937.

Estrogenic Hormone administered to 31 female and 7, male patients with atrophic rhinitis proved to be effective. An oil solution representing 1000 international units per cubic centimeter is sprayed into the nose, using a dose of 0.25 cc. for each nostril. Preliminary use of an alkaline nasal spray is advocated. Mortimer, H., Wright, R., & Collip, J. B., *Canad. M. A. J.* 37:445, 1937.

Felton's Antipneumococcic Serum Type 1 administered intravenously to a patient with primary pneumococcic peritonitis, was followed by complete recovery on the 24th day of the illness. Cooksey, W. B., *J. Michigan M. Soc.* 36:232, 1937.

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Incidence of Trichinosis in America, ranges from 3.5 per cent in New Orleans to 27.6 per cent in Boston, the highest incidence being found on the east and west coasts and the lowest in the far south. Edit., *Ann Int. Med.* 11:1063, 1937.

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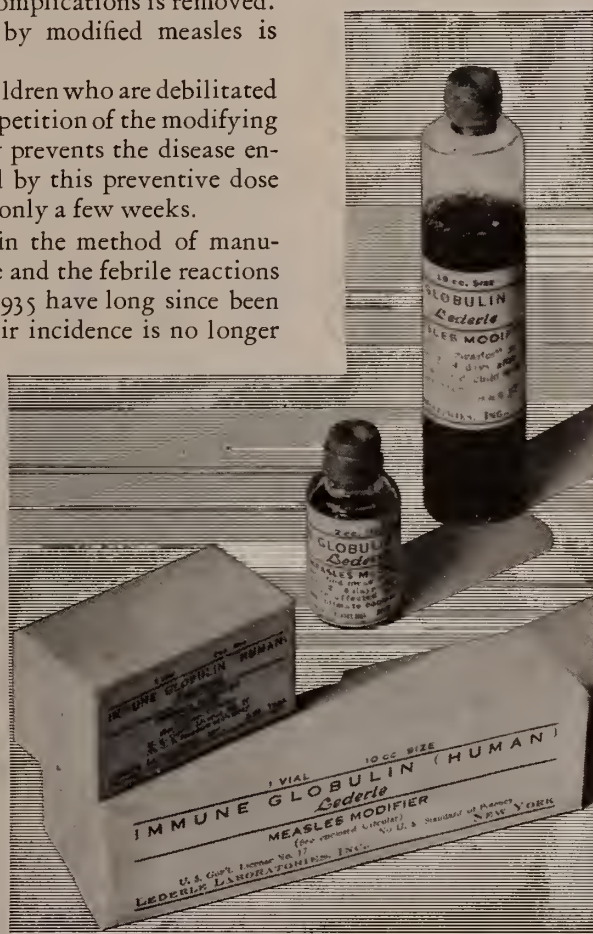
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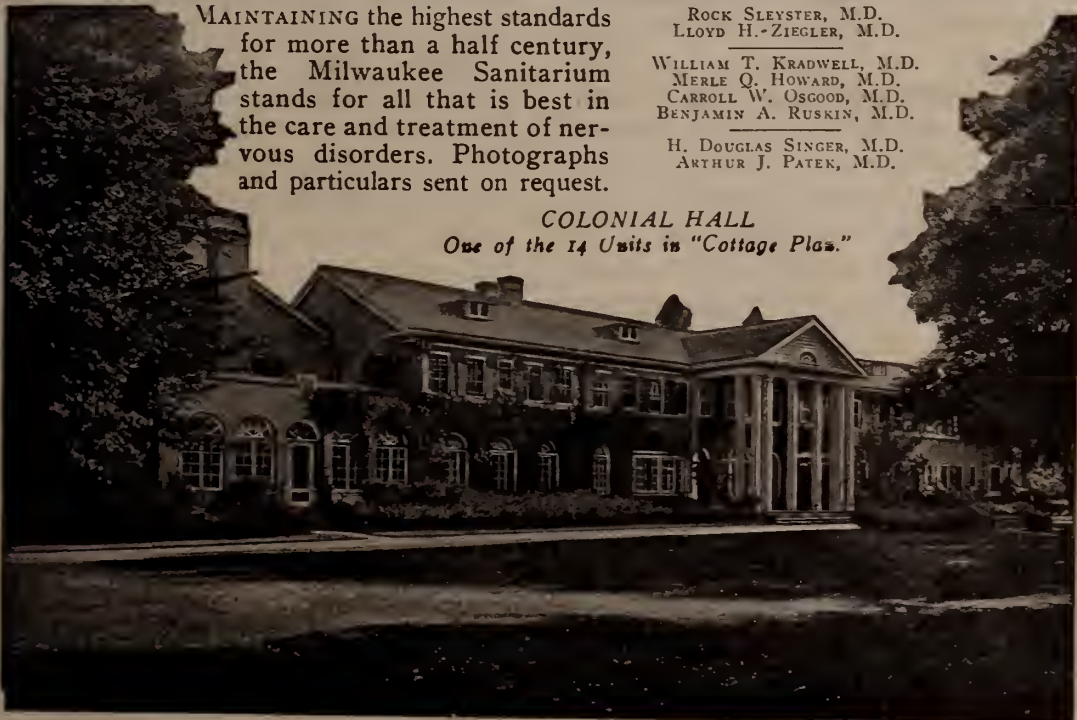
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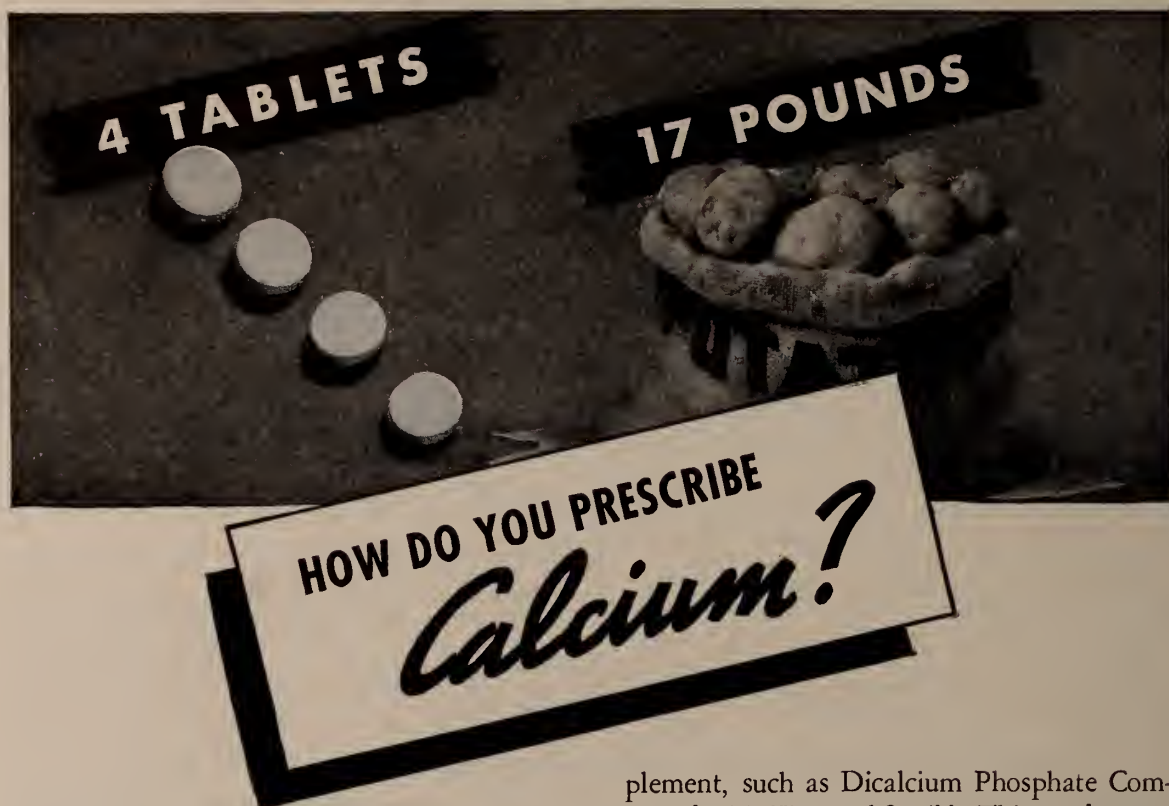
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II. THE BLANCH

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enzymes naturally present in the raw foods and prevents further enzymatic action. Inhibition of enzymes—particularly those inducing oxidative reactions, yields products of superior quality and nutritive values. Fourth, the blanch may serve as an added cleansing measure and also remove "raw" flavors from certain foods. A final function of the blanching operation is to fix or set the natural color of specific products.

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A. W. Bitting,
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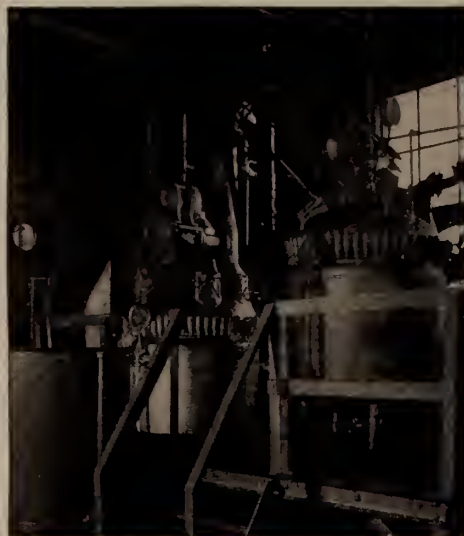
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**Proc. Soc. Exp. Biol. and Med.*, 1934, 32, 241-245
Laryngoscope, Feb. 1935, Vol. XLV, No. 2, 149-154
N. Y. State Jour. Med., June 1935, Vol. 35, No. 11
Arch. Otolaryngology, Mar. 1936, Vol. 23, No. 3
Laryngoscope, Jan. 1937, Vol. XLVII, No. 1, 58-60

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1. Kahnt and Doisy: *Endocrinology* 12:760, 1928.
2. Deckert, Mulhall and Swiney: *J. Lab. & Clin. Med.* 23:85, 1937.

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ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF
THE ILLINOIS STATE MEDICAL SOCIETY

VOL. 73

OAK PARK, ILL., APRIL, 1938

No. 4

ILLINOIS MEDICAL JOURNAL

Published monthly by the Illinois State Medical Society under the direction of the Publication Committee of the Council.

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Membership correspondence to Dr. Harold M. Camp, Monmouth, Ill.

Society proceedings and news items and changes in the mailing list to Dr. Henry G. Ohls, Managing Editor, 1618 Juneway Terrace, Chicago.

Subscription price of this JOURNAL to persons not members of the Illinois State Medical Society is \$3.00 per year, in advance, postage prepaid, for the United States, Cuba, Porto Rico, Philippine Islands, Hawaiian Islands and Mexico. \$4.00 per year for all foreign countries included in the postal union. Canada, \$5.50. Single current copies, 50 cents.

Editorials

DICTATORSHIP RUNNING RAMPANT, CONTROL AND SUPPRESSION MENACES DEMOCRACY

There is an ever accumulating volume of ignorantly devised and dictated regulations tending to take the practice of medicine out of the hands of physicians and into the palms of politicians.

The United States is confronting the necessity of advance in legislation by repealing thousands of the hampering handicapping laws put on the statute books within the last twenty-five years.

Unless this is done and that with speed the long winded bunch of theorists and reformers, political milkmaids, utopian visionaries and idealists stand a fair chance of seeing the statute books themselves repealed in all their entirety. Russia, the great, glorious and magnificent empire of gilded barbarism, reared on tremendous natural resources, went the way of the dead through too much aristocracy. The United States, the grandest example of humanitarian, self-respecting government that the civilized world has ever known, seems bent on trailing Royal Russia through too much attempted democracy.

We started out with a constitution that was brief, pithy, to the point and flexible, asserting that God had created all men free and equal. This almost sacred document so arranged its provisions that a man was given a chance to prove himself capable of being a respected member of a group of self-respecting, sane men.

And the whole experiment started, constitution and all, if memory reminds aright, because a shortsighted British king wanted his peaceful colonists to pay a tax on tea. And that small, almost casual levy was the last straw the patient colonists could stand.

What, in the name of all common sense, would Patrick Henry say if he came back to earth today?

He would find not only tea taxed but the very country that he and his associates sought to rid of imposts, staggering under more laws, more

levies, more handicaps and more bureaucracy than did France itself when the streets ran red and Mirabeau and Danton called the turn on a situation that made France the keystone of European governmental crises.

So far back as 1925 George Higgins Moses, senior senator from New Hampshire and a patriot of the brand that made America prosperous, came frankly out at a banquet in Chicago and remarked that "In two years the state legislatures and the 68th Congress passed 59,000 statutes. Not content with the present lamentable record for law making the 69th Congress is going it one better. In the first nine days of its sitting the 69th Congress had introduced 10,000 pieces of legislation. Instead of 'E Pluribus Unum' the national motto has become 'Pass the Buck.' This buck passing begins in the town council. It winds up in congress."

What the Senator said then is truer than ever today. And the medium for buck passing is "yet another law." And the greater portion of these laws seem to simulate preachment for a democracy though they mean it not.

With about one out of every four citizens gainfully employed on the national or community political payroll it does not become the average United States citizen to look askance at figures from soviet Russia. In a recent article in the *Chicago Daily Tribune*, the newspapers' correspondent in Russia, Henry Wales, cited figures to show that brave as is the struggle beyond the Caucasus the misguided citizenry are finding their own bureaucratized democracy a sad failure. Russia seems to have exchanged the slavery of the czars for the slavery of the soviet. Paternalism sticks its nose into the most intimate of family affairs and relationships under the false hypothesis of "For the good of the state." And it is a similar idea of political exploitation of the individual for the benefit of the political payroll that the payroll contingent endeavors to install in the United States.

There is no party line in this revolt of the thinking patriot from the curse of standardization and over statutization and over centralization of Government in Washington, D. C. After all the state is no greater than the individuals who are its components, nor are the resources of a state richer than the resources of these individuals. National wealth is individual wealth summed up. National government should be the grouped government of individuals and not

the group government of individuals by an individual group. Consider this statement thoroughly. To paraphrase the familiar advertisement, "It's marvelous what a difference a little 'D' makes."

An individual group government means a bureaucratic government and a total differentiation and complete departure from the constitutional principle of "government for the people, by the people and of the people." When this bureaucratic government comes from a group organized with an eye to its own interests first the result forecasts its own conclusion. The world has yet to produce a group of such altruistic practice that the theories of the Great Nazarene come first upon this earthly sphere. The nearest approach we have had to that was found in the little group of patriots who drafted the Declaration of Independence and the Constitution of the United States of America and of their patient followers through peace times and war times down the decades since 1776.

The strength and innate vitality of those two great documents of human liberty, human understanding and human feeling have been put to the acid test. And never more crucially than during this past two decades. The years that made the United States of America the head of manufacturing nations of the world unfortunately found the country so bent on over production that it did not draw the line even on the production of handicaps, such as the most interfering, meddling and strangulating legislation.

Being a nation founded on the humanities it is not surprising that these interferences should seek foothold in the profession dealing most closely with the humanities,—the practice of scientific medicine and the scientific care of the sick.

To this end the statute books of the country reel with ignorantly devised and dictated laws tending to take the practice of medicine, the care of the sick, the prescribing of medicaments and the general conduct of prophylactic therapy out of the hands of the physicians and into the paws of the politicians.

Alexander Pope's famous couplet, "A little learning is a dangerous thing; Drink deep or taste not the Pierian spring" never found more apt application than in the case of the medical profession and its lay dictators. The passion for telling the doctor how to run his business is a false conception emanating from the desire of

the medical profession to impregnate the public with the knowledge necessary to produce competent community sanitation on the part of individuals and householders.

If let alone it would probably have run its course, or to dip again into Elizabethian English to have "died a-borning." But the keen and able eye of the political aggrandizer saw in this situation a foundling idea that promised rare results, and proved feasible for ready adoption.

With the drastic consequences the medical profession has been wrestling ever since. Public health service, a sine qua non of the day, has been kept only partially in the hands of medical men. This situation however shows more signs of clearing up than does any other phase of lay dictation of the practice of medicine.

Not only are charlatans, quacks and ism-practitioners finding their second wind through statutes, laws and political affiliations born of flush pocketbooks and ready tongues but the menace of the lay dictation, aye even of the lay practice of medicine, is rapidly attaining herculean proportions. This growth finds its greatest nourishment from the statute books, the legislative halls and the political jobbery and general machinery that knows but one creed, "Rule or Ruin; Make Jobs to Get Them."

It is not the purpose of this JOURNAL to urge the passage of statutes to add to those already lying inert, unread and unenforced on the legal tomes and land. But it is the purpose of this JOURNAL, now as always, to stand up for the rights of the American citizen and for the sanctity of the medical profession as well as for its duty to individual and general health. Better for the country a million times over if every statute were dumped into the ocean and the Declaration of Independence and the Constitution of the United States alone left with which to govern the most remarkable and progressive nation the world has known. "The best government is the least governed." Perhaps with that background the man who knows his business, the man trained scientifically to practice medicine might be allowed so to do, without being told by a wealthy butcher or a retired brewer as to how he should treat typhoid fever and how much he should charge for a maternity case.

As it is now the tide of the statutes runs on and on like a wolf pack. The statutes continue

to multiply like flies. Every day the doctor discovers some new angle of attempted medical control and of suppression, against which he must fight and for which himself and other overburdened taxpayers must pay. Nor does this payment once out of a thousand times go into the pockets of someone scientifically competent to administer the service for which the payment is made. Rather does it go to some politician, or some time server needing a job or to some corporation yearning to add yet another unit to its meed of power and despotic sway. Tax slavery is a crime of the first water; but the enslavement of science is blasphemy of the humanities.

Every day the doctor discovers some new angle of control and of suppression against which he must fight. Too many laws and too little respect for them is American plague.

FOOT AILMENTS AS A CAUSE OF PHYSICAL DISABILITY

Among the numerous branches of medicine neglected by the profession to the everlasting exaltation of the charlatan is that of the ills of the human foot.

Too many of our general practitioners fail to realize that there can be and are many serious ailments of the feet other than those of congenital deformities or accidental mutilation.

Considering that the feet are the levers by which that most wonderful machine—the human body—is propelled it is astonishing that how small an amount of attention is paid to pedal disease prophylaxis and cure.

Foot ailments are a cause of a great deal of physical and financial inefficiency and great physical distress.

Statistics reveal that foot ills are on the increase and that annually in the United States through inefficiency caused by pain and discomfort and crippling industry suffers a loss of some \$100,000,000.00. This same report asserts that nine out of every ten adults are afflicted with some form of foot ailment; that of this number sixty-eight per cent are among women and thirty-two per cent among men. This is explicable because of the desire of women to appear to have small and dainty feet, and to attempt to wear a shoe that is too small or of an artificial shape compared to the natural conformation of

the foot. Entering further into this tabulation one hundred per cent of the foot ailments among women run into a ratio of 70.6 per cent between the ages of thirty and fifty and of 20.4 per cent between the ages of eighteen and thirty. That foot ailments in women increase in proportion to age is indicated by the fact that between the ages of forty and sixty as well as between the ages of twenty-five and forty the percentage is fifty in each group.

Seriousness of this foot impairment may be gauged by the fact that in surveys made of school children between the ages of eight and fourteen 80 per cent of the girls and 65 per cent of the boys are found to have defective feet. Much of this is caused by ill-fitting shoes, usually too small a shoe from babyhood.

Other causes of pain and physical disability accompanying foot defects are paralysis, retarded development in congenital clubfoot, poor body posture, foot strain or metatarsalgia, callouses and plantar warts, march foot, pigeon toes or metatarsus varus, chronic arthritis, a short achilles tendon, excessive weight, improper walking, and diseases of arteries and veins of the extremities. It is generally agreed that pronated or flatfoot and the foot with a high arch are the two chief forms to which most of the suffering from foot defects can be attributed. Fascia in the plantar area may be contracted, short bones may protrude and form a prominence, and tendons and muscles may contract until they become shortened, but these anomalies are classified as combinations of the flat and high-arched foot.

In a review of the voluminous literature on foot affections it can be readily seen that more space is devoted to a study of flat or pronated feet than any other foot defect. Indeed, many who have studied the subject say that flatfoot is the most frequent cause of painful feet. Many orthopedic surgeons have abandoned the name flatfoot, and speak of this defect as weak feet. It is a weakness often due to overuse of muscles as when one walks or stands on hard surfaces for a long time, and also a weakness of muscles from too little use. Deformities do not necessarily accompany weak feet, however. Many have weak feet, but examination does not reveal any signs of deformity such as arches that are depressed or flattened out. A foot completely flat is said to be painless. Steadily increasing or constant pain is the most common symptom of

weak feet, and there may be pain in muscles of the calves and cramping at the base of the toes. In some instances the pain extends to the knees, hips and back. In a number of cases not only is the physical health undermined, but a chain of nervous disorders occasionally accompanies this distressing condition.¹

Among the numerous foot affections resulting in physical disability is chronic arthritis, a condition not infrequently diagnosed as strain of the foot. Stiffness and pain, limitation of motion and weakness of muscles are symptoms that frequently accompany this disability. In some cases swelling occurs. Many patients find that hot foot baths afford the greatest relief, and properly fitted shoes are of much importance in preventing deformities that occasionally follow. Rubbing and kneading the feet will prove to be a valuable measure in treating this refractory affliction.

Epiphysitis, or so-called apophysitis of the heels, is seen in healthy and active children, who frequently injure the epiphyses of the heels while playing. In some cases a chain of symptoms follow such as limping, pain and tenderness in the heels and in the achilles tendon.² Calf muscles may also be the seat of pain, and some victims of foot trouble find relief by walking on their toes. Wearing shoes without heels is said to be a factor in producing this condition. Elevation of the heel to relieve tension on the achilles tendon helps to bring relief.

Two other painful foot affections are metatarsalgia, or foot strain, and march foot. Foot strain occurs frequently in persons who walk or stand on hard surfaces for long periods of time. It is due to a continuous strain of muscles and ligaments, and the pain is not only annoying but many sufferers describe it as unbearable. March foot occurs mainly in persons who walk a great deal like the soldiers. Pain, spasms of muscles and swelling are the chief symptoms, and in many cases they follow soon after the soldier has been called upon to make a long march. Occasionally a civilian who leads a sedentary life walks a long distance with the result that the above symptoms follow. In this particular instance the condition should be regarded as "strained" foot, although march foot and

1. Harris, B. W.: *Weak Feet as Disabling Among Ex-service Men.* Mil., Surg., 84:124, 1937.

2. Meyerding, H. W., and Stuck, W. G.: *Painful Heels Among Children.* J. A. M. A., 102:1658, 1934.

strained foot are considered a synonymous pathological condition by some orthopedic surgeons. A number of writers have described a fragility of bones that occasionally accompanies march foot, and in some instances fractures without any history of injury are revealed by the x-ray. Periostitis is frequently present in this affliction.

Apparently many doctors steer clear of foot defects, fearing that they may be classed as chiropodists by their colleagues. As a result great numbers of sufferers consult quacks, who have grown rich through treating annoying foot-defects. Even shoe salesmen not infrequently have a clientele who continue to seek their advice when such work should be done by doctors. Manufacturers of arch supporters and shoe salesmen find that the care of this multitude of individuals who suffer from foot defects is a profitable occupation. An example of this attempt to usurp the privileges and practices of doctors was seen in the activities of the Arenberg-Plotkin Shoe Company, of Scranton, Pa. It is said that the words "approved by Dr. Aren" was stamped on the soles of certain shoes they sold for orthopedic purposes as a trade name or brand for their products. In a decision of the Federal Trade Commission of May 17, 1935, the firm agreed to cease and desist from using that trade mark "when said products have not been approved, sanctioned or commended by a doctor of that name."³

Out of the immense volume of literature describing foot defects come many remedies and suggestions for the purpose of alleviating or curing annoying or disabling foot conditions. When this knowledge is summarized it appears that while numerous investigators agree on certain forms of treatment for foot defects in general, there are other foot affections that must be studied and treated as separate and distinct pathological conditions. The majority of investigators regard the foot as consisting of two arches—the longitudinal and the transverse—both arches must be carefully considered when treating weak or flat feet and those with high arches. A minority of investigators show disapproval of the term arches, and they teach that foot imbalance can be attributed mainly to improper distribution of weight upon the "triangle of support."⁴ One point of the triangle is the

heel, another is at the base of the great toe, and the third at the base of the little toe. If the stress of body weight transmitted through the leg falls outside or inside of the triangle trouble may follow. Efforts must also be made to distribute the weight over as large an area as possible by means of supports placed in the shoes.

Out of this maze of literature on foot defects another matter of agreement in treatment is found in massage and bathing the feet in hot water. Many sufferers find great relief when the feet are rubbed frequently and massaged. Properly fitted shoes relieve some foot ailments, but in such conditions as flatfoot and high arches supports must be employed, and the feet must be strengthened by long-continued exercises. One must not lose sight of the fact that in the beginning the foot was designed to be active and supple, and that supports without other treatment can give only temporary relief. Indeed, it is held that some congenital affections can be overcome by means of shoes and casts, together with a system of exercises. For example the prognosis in congenital talipes is considered favorable if over-correction is begun early and maintained until the child learns to walk by means of plaster-of-paris casts. Supports employed in treating flat-foot are made of steel, aluminum covered with leather, and such resilient substances as cork and soft rubber. These are elevated or lowered by means of wedges of varying thickness. A number who have studied the foot-defect problem point to the benefits derived by patients with march foot from walking on sod and uneven ground without shoes. Not only are the feet strengthened but the horny layer of the skin becomes more resistant.

1938 ANNUAL MEETING PRELIMINARY PROGRAM

The preliminary program for the 1938 annual meeting of the Illinois State Medical Society to be held in Springfield, May 17-19, is published in this issue of the *ILLINOIS MEDICAL JOURNAL*. This program will be of interest to all members, and to many guests who desire to attend the meeting.

The official program as it will be presented at the meeting will appear in the May number of this *JOURNAL*. The list of scientific, technical exhibits, and exhibitors in the "HALL OF HEALTH" is not complete at this time. The

3. Federal Trade Commission Decisions, May 17, 1935.

4. Cotton, F. J.: Foot Statics and Surgery. N. Eng., J. Med., 214:353, 1936.

Hall of Health, extensive health exhibits arranged by the Illinois State Medical Society and many cooperative organizations, will be open to the public from Monday, May 16, to Saturday evening, May 21.

Complete announcements will be made in the official program, and those who have assumed responsibility for the development of these exhibits give every assurance that the public at large, will be welcome to visit the Hall of Health and remain there as long as they desire. Many announcements of these exhibits will be made through the press, this JOURNAL, special mailing folders, and over the radio, so that all people within some distance of the Capitol City will know about them and receive a courteous invitation to visit the exhibits.

Springfield has many fine hotels, but it is advisable for those who have not already done so, to make reservations early and be sure to have suitable accommodations throughout the meeting. The Hotel Committee from the Sangamon County Medical Society will be pleased to assist any member or guest to find suitable hotel accommodations.

Complete details concerning the meeting will appear in the May ILLINOIS MEDICAL JOURNAL, with pictures of the leading hotels, meeting places, and many points of interest in and around the City of Springfield.

The Governor of Illinois and other state officials, the officials of the City of Springfield, the Association of Commerce, Sangamon County Medical Society and many civic organizations unite in extending an invitation to all physicians of Illinois and surrounding states to attend the meeting.

More complete details will appear in the May JOURNAL.

* * *

GOLF TOURNAMENT

There will be a golf tournament held at the Illini Country Club on Tuesday morning, May 17, for the doctors attending the Annual Meeting of the State Medical Society. Suitable prizes will be awarded.

For any information, write to Dr. Fred P. Cowdin, Chairman, Golf Committee, Springfield, Illinois.

ALUMNI AND FRATERNITY LUNCHEON

Details regarding the Alumni and Fraternity Luncheon to be held during the Annual Meeting of the State Medical Society at Springfield will be announced in the May issue of the JOURNAL.

* * *

STAG DINNER

The date and place for the Stag Dinner has not been definitely decided upon.

The May issue of the JOURNAL will give full details.

* * *

PRESIDENT'S DINNER

For many years at the annual meetings of the Illinois State Medical Society, Wednesday evening is devoted to the honoring of the President of the Society. The President's Dinner will be held at the Hotel Abraham Lincoln, at 7:00 P. M. Wednesday, May 18. Every member and guest at the meeting should endeavor to attend this highly interesting function.

Dr. Rolland L. Green, Immediate Past-President, will officiate as Toastmaster at the Dinner. All Past-Presidents are invited guests of the Society.

Elaborate plans are under way for a highly successful President's Dinner with good food, entertainment, and no long speeches. During the evening, the Chairman of the Council, E. P. Coleman, will present Dr. Packard with the President's Certificate.

Following the Dinner, dancing or bridge, according to the desires of the guests, will be on the program.

All members and guests should unite in honoring Dr. R. K. Packard, President of the Illinois State Medical Society, on Wednesday evening, May 18, 1938.

IF AND WHEN WE HAVE STATE MEDICINE

Dr. Harold I. Harris of Hollywood, California, in the 1937 issue of the *California & Western Medicine*, pages 129 and 130 under the title "If and When We Have State Medicine" asks several pertinent questions relative to the status of the doctor under a State supervised and regulated system of medical services for the people of the United States.

Before approving or sponsoring any setup for universal medical service it would be well for physicians generally to weigh carefully the questions propounded by Dr. Harris and to review other literature readily available bearing upon the subject of the status of physicians in other countries operating under a system of regimental medical service.

Every question propounded by Dr. Harris is of vital importance to every physician and should be read and carefully digested.

We quote Dr. Harris as follows:

IF AND WHEN WE HAVE STATE MEDICINE

To the Editor: What will be the status of the specialist if and when we have State Medicine? How will the various specialties be classified? How will the men in the different branches be selected, on the basis of years of practice, years of post-graduate work, or by the number and kind of influential political friends, or on the basis of competitive examination similar to civil service?

Will post-graduate work be encouraged? If so, will the State pay for it, pay for the time off, similar to army regulation? Who will designate the places to study? Will that be left to the discretion of the individual physician, or will it be controlled by a board? If by a board, will it be composed of doctors or laity?

What will be the psychological reaction of the mass of the profession toward the compulsory attendance of patients? What will be the stimulus for exhaustive study of puzzling cases?

Will every section of the human anatomy be divided for special study, and be under the jurisdiction of a specialist in that part? If so, what will be the result obtained by the narrow specialist in relation to other ailments of the same individual? Will it be necessary to have a dozen specialists in consultation if a patient should complain of symptoms in different parts of the body?

What will be the inducement to physicians to write scientific articles?

What will be the relation of physician to patient? What if an illiterate patient decides that the physician attending the case is not competent—will he go to the lay committee to complain, or will he go to some politician friend to have the doctor disqualified, or reduced in rank?

If State Medicine becomes a practice, can the State stop there? What effect will it have upon the new graduates? Are they to become specialists as soon as they graduate, or must they go out in the field as general practitioners? If as specialists, who will pay for their time and tuition? The hospitals in which they study will have to conform to some degree with the plan, and will they, as a consequence, be supported by the State? What then will become of the private donations to these institutions? If private bequests are withdrawn, will that increase the amount necessary to support the institution to be given by the State, and will that in turn increase the State's budget and in turn increase the taxes?

If the physician is a State agent, will the medical students attending the State schools be subject to pay the present rate of medical tuition? If cheaper, what will become of the private schools?

What will become of the various medical societies? What will be their value? Certainly not for medical protection, for if State Medicine comes, that in itself will show that the medical societies are not capable of protecting their interests. Certainly not to protect the lay people against themselves, because that will be too late. Will it be necessary to belong to a medical society to be in good standing? Do State officers, clerks, judges, and various other State employes belong to fraternities in order to be in good standing?

If there is a change in the political situation, will the general practitioner of today be the specialist of tomorrow? If there are one hundred graduates, and a vacancy for only fifty doctors, what will become of the other fifty? Or will the State regulate the number it will need to be permitted to graduate or enroll? If a physician who is in ill health, or for other reasons needs to or desires to make a change from one state to another, will it be necessary to make a political application, medical application, or wait for a quota, or wait for a vacancy?

If there exists an old-age law, will the doctor be removed after a certain age, and be placed on a pension? Will a surgeon be replaced at a younger age than a general practitioner?

Who will be responsible for malpractice suits, the doctor or the State?

If each physician asked himself each one of

the foregoing questions, and made an attempt to answer as he thinks the situation might be, we would have a more concise idea as to the precise effect upon us and the laity if and when we have "State Medicine."

A BILL THAT WILL REGIMENT AND CONTROL EVERY PROFESSION AS WELL AS EVERY FORM OF BUSINESS ENTERPRISE

Speaking at the "Town Hall Meeting of the Air" at Town Hall, New York, on February 24, James H. R. Cromwell spoke against the O'Mahoney-Borah Federal Licensing Bill for regimenting all American business as follows:

The pending O'Mahoney-Borah Bill for Federal licensing of business organizations "would foist upon American industry bureaucratic regimentation without parallel except in Fascist countries," according to James H. R. Cromwell, co-author of "In Defense of Capitalism" and other economic studies. Mr. Cromwell asserted that the proposal aimed to use the licensing device "to remake our economic structure."

"The old N. R. A. was a pop-gun to a cannon compared to the sweeping powers conferred upon the Federal Trade Commission under the projected laws," Mr. Cromwell said. "The N. R. A. could police, regulate and enforce various trade practices voluntarily agreed upon, but it had no power to forbid new or existing enterprise, or to force any business to a full-stop because of some real or technical violation."

"The fact that the Federal Trade Commission may bring within its jurisdiction persons not engaged in interstate commerce if they are competing with corporations federally licensed, thus drawing even local enterprise into the orbit of Federal control, is final proof of how completely the present scheme seeks to control economic life in America."

"This measure seeks to direct the flow of virtually all business and enterprise in the United States through the bottle-neck of an omnipotent Federal Bureau."

Mr. Cromwell approved the social objectives ostensibly aimed at by the Bill, but argued that the licensing scheme "is merely the handle of an umbrella which covers a vast body of regulation and would control practically every form of business enterprise." He contrasted the alleged ob-

jectives of the Bill and its actual provisions, adding:

"The reason is not far to seek: there can be no one sweeping law or plan to regulate the entire economic life of a great nation like this. The living principle of the American system is free enterprise. Certainly there are maladjustments and abuses in our economic system. Surely reforms are needed. *But our problems flow from fundamental causes. They cannot be solved by fiat of bureaucracy or by legislative edicts.*"

Even granting that "divinely inspired bureaucrats might be found to run business better than our business men," Mr. Cromwell argued, "*the question still remains whether American industry should be regimented and taught to goose-step, or whether it should be given opportunity to create new industries, develop new inventions, initiate new enterprises and find new services, without which the solution of our employment and other economic problems cannot be achieved.*"

"If the aim is merely to clip the power of big business," he said, "let's recall our national experience under the N. R. A. Who was hit hardest by the provisions of that Act? Ask the kosher chicken dealers, the small shopkeepers and others who finally arose to smite the N. R. A. You cannot shoot at business in general without hitting the most vulnerable and it's the little business man who is likely to get hit first."

"Obviously there must be jobs to bargain about before collective bargaining means anything. Obviously there must be greater production if we are to have greater national income. Social progress is determined by the productivity of our economic system. We cannot command prosperity by wishful legislation. We cannot call forth these conditions by any system or press-button economics."

"*The time has come, I believe, when our economic system should be given food, not stimulants; when it should be freed as much as possible from fear and dependence; when it should be allowed to exercise initiative and enterprise in the public interest; when hope of reward, not fear of punishment, should be used to raise the productivity of our system.* I do not seek to underestimate the seriousness of the problems that still call for solution but it would be folly to adopt a remedy which is worse than the disease."

"Even more important is the fact that free enterprise and free government must stand or fall

together. You cannot abolish one and maintain the other. There is not and there can be no such thing as a regimented democracy. Either the State must be the servant of the people, or the people must be the servants of the State. Since eternal vigilance is the price of liberty, let us never forget that Democracy has perished wherever economic freedom has been destroyed."

WHAT IS COMMUNISM?

Nicholas Lenin, the father of present date communism, defines it as "nothing less than power based upon force, and limited by nothing—by no kind of law and by absolutely no rule."

The word communism comes from the Latin word *communis* which, roughly translated means "in common." The idea being that all people share, not only in the government, but in the profits of industry and labor. The word communism, however, as used by the Soviets, has a meaning far different from the original Latin word.

There are three main elements in the system advocated by the Communist:

1. The denial of God and the suppression of religion.
2. The abolition of private property.
3. The stirring up of hatred and enmity between the various classes of society (for instance: urging the poor to despise and murder the rich), in order to bring about (1) and (2).

SENATOR KING CONDEMNS REGIMENTATION

In a speech in the U. S. Senate, December 9, 1937, Senator King condemned regimentation. He said:

Regimentation is now quite fashionable in Russia, Germany, Italy and in some other countries; but as regimentation advances, liberty and the rights of individuals are submerged. Many people are fascinated with the idea that laws are more important than liberty, and that bureaus and powerful government agencies are necessary even in democratic governments, to control trade and industry and the lives and habits and activities of the people. It is somewhat singular that with the pages of history before us, we should follow obsolete and discarded policies and introduce into our economic and industrial life policies that are an outgrowth of oppressive paternalism and autocratic rule.

ASK THE DOLLAR IN YOUR POCKET

Merle Thorpe, in "*Nation's Business*" says:

Dollars—and the men who manage them—gave us our industrial stride because we permitted them to see far down the road by giving them a government of laws and not, as in other countries, and as we are doing today, a government of men.

Dollars—and the men who manage them—gave us our industrial supremacy because our courts, under the Constitution, through a dozen stormy periods of stress, gave protection from the demagogues and their attack upon success with the accompanying confiscation of income and property.

Straws in the wind indicate that we may bring back incentive to men and dollars by restoring the American practice of written law and by refusing to punish success by tax and other "reform" and "yardstick" measures. In the meantime, the dollars—and the men who manage them—wait.

DIAGNOSTIC METHODS IN UNDULANT FEVER (BRUCELLOSIS) WITH RESULTS OF A SURVEY OF 8,124 PERSONS

S. E. Gould, Eloise, Mich., and I. F. Huddleson, East Lansing, Mich. (*Journal A. M. A.*, Dec. 11, 1937), describe briefly the performance and interpretation of the laboratory methods which at present are believed to be most useful in the diagnosis of undulant fever (brucellosis) and report some of the results of a survey of the incidence of brucellosis in a large county hospital. An unusual opportunity to study the incidence of *Brucella* infection presented itself at Eloise Hospital and Infirmary, whose milk supply was partly infected with *Brucella*. All persons in the institution were first tested intradermally with brucellergin. Among 8,124 persons tested, 845, or 10.3 per cent, showed positive brucellergin reactions. The incidence roughly paralleled the average length of stay of the various groups in the institution. The incidence was lowest among the hospitalized group (6.2 per cent), whose average stay was the shortest, and greatest among the mental patients (15.4 per cent), whose average stay was the longest. The brucellergin test was found to be the most sensitive test in the diagnosis of brucellosis. If the test is negative, brucellosis will usually be ruled out. If the test is positive, the opsonic test should then be performed to determine whether infection or immunity is present. A negative agglutination test does not rule out *Brucella* infection. The agglutination test is diagnostic only in a small percentage of cases and gives no information as to the immune status of the subject. Carriers of *Brucella* may be of some importance in the spread of the disease.

MEDICAL ECONOMICS

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Kankakee, Illinois

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The interest and response to the program of the Committee on Maternal Welfare, so ably organized by the president, Dr. Williamson and the Secretary, Dr. Carey, is most gratifying. So far the interest has been on the part of the medical profession but as the plan expands under the careful guidance of the county societies, there is no doubt that the interest of the public will be still greater. The success of the "refresher courses" in obstetrics and pediatrics have definitely shown that the medical profession is greatly interested in increasing its knowledge in these subjects. Their failure up to this time in taking special work in these subjects has been due to the fact that they were not made readily available. The busy family physician can afford neither the time nor the expense of attending clinics in distant cities at frequent intervals. However, he has shown that when the opportunity of getting instruction without so much loss of time and money is given, he is ready and willing to make the necessary effort to attend, even though it necessitates driving even a hundred miles in the rain or snow to do so. Let us hope that the framework has been erected for a much more comprehensive program next year.

As the annual meeting time approaches, every member of the House of Delegates should give some time and thought to the problems to be presented for action. Among these will be that of the amount of the dues for the next year. This is always a controversial subject, and with another depression at hand, the same arguments will be presented for lessening the dues. To those members best acquainted with the work of the Illinois State Medical Society any such action seems ill advised. Our present dues are now among the lowest of any state society, not even to be compared with those of similar non-medical associations. What is really needed is an extension of the activities of the societies to the point where the present dues are entirely inadequate.

This is being done slowly, but carefully under the guidance of the state officers. Another question to be decided is that of the future policy of the Medico-Legal work. At the last annual meeting there was a radical change made, as a result of the action of the Ethical Relations Committee of the Bar Association. Action at that time seemed obligatory and nothing has come up since that time to change the opinion of our legal staff. It is, however, high time for the permanent policy of the society to be decided. The Council will have definite recommendations to make at the meeting and it is to be hoped that the delegates will have talked the matter over with their officers and among themselves so that they will be conversant with the proposed changes and can arrive at a definite conclusion. It is to be hoped that the work of the Committee will be augmented rather than curtailed and that the plan agreed on will meet with the approval of the Bar Association, and that we will no longer be accused of practicing law illegally. To do this it will probably be necessary to discontinue the hiring and paying of lawyers by the society. However, this can be done either by the accused man himself or by the insurance company, if he is insured as the major portion are. The real work of the Committee has been in the past and should continue to be, the aiding of the accused man by giving supporting testimony and aiding in all ethical ways his conducting an adequate, successful defense. Payment of actual expense is really a minor difficulty in such cases. Much thought should be given to the election of your officers for the coming year, particularly the councillors, who have much responsibility between the times of the annual meetings. They must be able, conscientious men who will give generously of their time and energy.

The recent report of the United States Public Health Service continues to attract considerable attention by both the medical profession and the

laity. As one reads and rereads the reports, new points appear. Two of these, which seemed pertinent to the writer are "Chronic diseases account for approximately 42% of the 6,000,000 persons who are sick on any given day. The chronic diseases, disabling for a week or more, were in order of frequency, heart disease and arteriosclerosis (which showed a disability rate of 8.5 per 1,000), rheumatism, 5.9; nervous disease, 5.5; orthopedic conditions, 2.6; nephritis and other kidney disease, 2.5; non-malignant or unspecified tumors, 2.0; asthma and hay fever, 1.4; all forms of tuberculosis, 1.4."

"Of the 2,250,000 persons included in the sampled urban population only one in five was found in a family with an income of more than \$2,000. About 40% of the families interviewed existed on annual incomes of less than \$1,000. Almost half of these families had received some form of relief during the year 1935."

These statements show that the income of people has definite effect on the illness of the families and that chronic diseases are most common in the low wage groups. Just furnishing medical care, regardless of the source, will influence the incidence of the same much less than the paying of adequate income so that these families can live differently. By the time these so-called "chronic diseases" have developed to the point of causing loss of time, their treatment is relatively difficult and unsatisfactory.

The Bulletin of the Chicago Dental Society under date of March 10, published a speech of the Honorable Samuel B. Pettengill, member of the United States House of Representatives from the State of Indiana, delivered at the opening meeting of the Midwinter Meeting of the Chicago Dental Society. It is unfortunate that the length of the speech and the limited amount of space allotted this column makes the reprinting of the same here impossible. While much of the information in the speech is not new, it is so well presented that it will be worth the time necessary to procure and read the article that all members of the Illinois State Medical Society who have this Bulletin available should do so. It is most encouraging to find that statesmen such as Mr. Pettengill have so thorough a knowledge on the subject of the problems of the members of the great professions that he can talk to us in our own language. But more encouraging still is the

fact that he sees the same as we do and agrees with those of us who for the past few years have so often felt that we were crying in the wilderness and that nobody was listening. Mr. Pettengill has listened to somebody and then made up his mind as to what could be believed. Read the article as it appears in this issue of the JOURNAL.

An address delivered by Past President Charles Reed, before the Chicago Bar Association, March 26, on pages 309 of this issue will be well worth your reading.

It is to be hoped that every physician in the state of Illinois if not in the United States has read the Citadel by Dr. Cronin. It has been a best seller for several months and has caused more comment than any other book in the past six months. Recently there has appeared another book of particular interest to the medical profession. This time from another viewpoint. "Socialized Medicine in the Soviet Union," by Henry E. Sigerist, M. D. This appears to be blatant propaganda. It has been analyzed by Dr. John Neal of Springfield, a Past President of the Society and member of this Committee. His review is the article following immediately. We feel that he has been most fair in his opinions and we hope that his comments will make some of the members of the society who have not already done so read the book.

E. S. HAMILTON,
Chairman, Committee on Medical Economics.

SOCIALIZED MEDICINE IN THE SOVIET UNION

HENRY E. SIGERIST, M. D.

Ardently sympathetic with socialistic ideals, transparently sincere and disarmingly frank in the fact that he selected for description and discussion only the "principles" and the "positive achievements which represent a permanent gain," the author of *Socialized Medicine in Soviet Russia* paints a glowing picture of the system and forecasts a great future for it. Says he:

"Since I have studied the Soviet Union, I know that there is a future for mankind; that whatever may happen in the Western World, there is a future for human civilization. And I know, in addition, that our highest medical

ambitions are not Utopian but may some day be realized."

As a basis for this optimistic outlook, Dr. Sigerist has examined the Russian experiment, chiefly from the medical standpoint. "I have studied it for five years," he says, "and could not have completed this study in so short a time if I had not been familiar with the socialist literature since my early student days." He finds, moreover, a remarkable phenomenon, one about which many worthy thinkers have cherished a profound skepticism. Human nature has been changed. "The Soviet Union has proved," he declares, "that human nature can be changed. It has been changed. A new social order has been established. A new civilization has been created with boundless possibilities of development." None familiar with the facts will dispute that a new social order has been established in Russia but many will await further and more convincing evidence that human nature has been substantially or even significantly changed. The bitter purges, the suppression of all opposition, the intolerance, the rigid discipline and the loud profession of peace motives while feverishly preparing for war smack significantly of a prevailing human nature very much akin to that which pervades the world at large and that which has characterized human creatures since the beginning of recorded time.

"Where the entire health work of a country, preventive and curative, is controlled by a central agency, the work can be planned. This is one more characteristic of Soviet medicine. The general idea is to supervise the human being medically, in a discreet and unobtrusive way, from the moment of conception to the moment of death." In short, everything in Soviet Russia is *planned*. One must be medically supervised whether one likes it or not. Individuals must be physically and mentally healthy, not that their lives may be abundant but that society and the state may enjoy vigor and strength. All personal freedom must be foregone in the interests of the body politic.

Dr. Sigerist brings out this distinction in philosophy clearly and he likes the Russian principles. His enthusiasm for the Soviet system of medical practice is therefore almost boundless. Admitting many shortcomings, he believes that only time stands between the Russian people and a system of medical practice that will give to

every person the maximum that science and skill has or may have to offer. He thinks that human nature can be changed.

Most readers will be impressed with Dr. Sigerist's masterful description of the Soviet system. Few will disagree with the objectives and ideals that are sought through the practice of medicine. Many, however, will entertain doubts concerning the effectiveness of the mass production of physicians and the mass distribution of their knowledge and skill.

"As the entire work is planned," says the author, "the various investigations are always coordinated." If this is an actuality in Russian medicine, human nature has indeed been changed. Even in so highly an organized and efficiently trained agency as the United States Army the activities of the various departments—Air Corps, Infantry, Quartermaster, etc.—are by no means *always* coordinated, especially during periods of stress.

Bearing in mind the foregoing observations, the student of medicine and public health will find this book of great interest and value. It describes with enthusiastic brilliance the heroic efforts of a backward and downtrodden people to lift itself out of an economic quagmire where ignorance and disease, famine and misery, poverty and squalor were the lot of the masses for centuries. In contrast with that history and experience, the new order in Russia—in medicine no less than in industrial affairs—represents indeed a great upward surge.

Private enterprise in Russia has been abolished. The State has taken over the responsibility of all industrial and commercial pursuits, of all educational endeavor and of security for the individual. All enterprises are planned in advance, not on the outlook of sales demand, but on the basis of social needs. Wages are determined partly on the basis of individual efficiency and partly on the basis of the importance attached to the work. Engineers, for example, were until recently the highest salaried profession. Physicians, according to Sigerist, now are paid practically as much as engineers.

All salaries and wages are paid by the government. All are eligible to two weeks' vacation annually with full pay, to old age pension, to free education and to free medical service. There is no unemployment and never will be. Every healthy person of both sexes is required to work.

There is no leisure class. All class distinction has been abolished, at least theoretically, although scientists are almost worshipped. "Hardly a day passes that the newspapers do not make some reference to their work, and they are almost as popular in Russia as moving picture stars in America. They receive the highest salaries, and many privileges are conferred upon them, such as good living quarters, automobiles, chauffeurs and whatever they may need."

Medical stations have been established within reach of all citizens and "the medical workers are considered the cadres in the fight for health." These stations are manned by the several classes of medical workers—physicians, feldshers (partly trained in medicine), dentists, nurses, midwives, and technicians. "If husband and wife work in different places, they may get medical care from different institutions. The significant fact, however, is that, regardless of a man's occupation, he is always in touch with an organized medical group responsible for his health."

Although there is but little choice of physician by the individual, "the health program is not dictated from above, but is, on the contrary, administered in the most democratic way." At the same time, so Dr. Sigerist contends, "the Health Department is one of the six departments obligatory for every city," and "the local health departments are accountable to their executive committees in administrative matters. As far as medical and sanitary questions are concerned, they depend entirely on the Commissariat whose directions they have to follow. As a matter of fact, they are the local organs of the Commissariat." Apparently the Russians have succeeded in granting complete freedom of local action and at the same time requiring complete compliance with regulations promulgated by the central authority. Indeed, "the People's Commissar of the U.S.S.R. is the chief sanitary inspector of the Union," and "Inspectors visit the various places at frequent intervals and the State Sanitary Inspection has the power to close unhygienic plants and to fine persons responsible for the conditions."

Especial attention is given to the health of child-bearing women and to children. Pregnant women are allowed vacation on full pay for 56 days before and 56 days after delivery. "All over the country *Women's Consultation Bureaus*

have been established, usually in connection with health centers. The Bureaus, as a rule, have three departments: one for sexual hygiene, one for pregnancy and childbirth, one for gynecology. Here the woman can get advice when she needs it."

Likewise nurseries, hospitals, convalescent homes, preventoria, clinics and health centers in great number have been built and more are under construction and planned. Physicians and nurses are being trained in large numbers. Plans are made at the end of each five year period and quotas of achievement assigned to each unit, medical and otherwise. "It is impossible at present to have physicians in every health station, and so a nurse, midwife, or feldsher is often the only personnel available. The efficiency of the service given depends primarily upon the initiative of the doctor—if the doctor is indolent the station degenerates quickly and the service is extremely poor. There is still a serious shortage of physicians, of all categories of medical personnel, and of medical facilities, particularly in rural districts. There are still poor institutions, poorly equipped and poorly managed. In Russia, as elsewhere, you may find bureaucrats and fools and people who like to take the way of least resistance."

With respect to the quality of medical service and the patient-doctor relationship, Dr. Sigerist made some interesting observations. "I saw many physicians at work examining and treating patients, and found them acting very much as would American and European physicians. I interviewed many patients and found them, as a rule, satisfied. I have seen physicians at work in Europe, America, Asia and Africa, and I have always found that a personal relationship exists wherever a physician and a patient come together. I have also found that the factor most likely to disturb the personal relationship is the money question, the fact that the patient has to pay the bill. The Russian system, which has removed financial considerations from the relationship between physician and patient, has necessarily removed a basic difficulty. Unquestionably the free choice of physician is somewhat limited in Russia, although it still exists to some extent. It is not to be forgotten that the free choice of physician is very limited in capitalist countries. In rural districts where only one

doctor is available, the patient has no choice whatever."

From all of this it seems clear that Soviet Russia has made remarkable progress in providing medical service, that the government has a satisfied conception of what ought and needs to be done in this field and that heroic efforts are being made to achieve idealistic results through the application of socialistic principles which abhor and prohibit private enterprise. That progress in this direction has been rapid and substantial none familiar with the facts can deny. Whether or not a medical service that will yield results comparable with or superior to those achieved in the United States can be developed is another matter. Theoretically the Soviet plan approaches perfection from the standpoint of results in health protection to the individual and to society. It remains to be seen how well the plan will operate. The human equation is still a factor to be reckoned with in spite of the assertion that Soviet Russia has demonstrated "that human nature can be changed." The desire for personal gain and recognition is a deeply rooted human attribute which is a powerful factor in stimulating ambition for personal achievement. Conscious knowledge that all essential human needs will be provided by a benevolent government, on the other hand, tends to cultivate indolence which is difficult to avoid except through the cultivation of fear and the imposition of a rigid discipline.

J. R. Neal, M. D., Springfield, Ill.

Correspondence

WELCOME TO SPRINGFIELD

To the members of the Illinois State Medical Society:

The Sangamon County Medical Society extends a most cordial invitation to the members of the Illinois State Medical Society to visit Springfield during its annual convention on May 17th, 18th and 19th. Special preparations will be made for greater attendance, a greater number of fine scientific and commercial exhibits and, as an added attraction, a "Hall of Health" which should make this meeting even greater than the 1936 meeting which many of you remember.

We hope that our preparations will be adequate for the attendance expected and again urge everyone not to forget May 17th, 18th and 19th.

SANGAMON COUNTY MEDICAL SOCIETY

Publicity Committee

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RUSSELL T. BOTHE, M.D.

DEDICATED TO DR. C. ST. CLAIR DRAKE

Asylum Light, February, 1938, issue, published by the patients and employees of the Peoria State Hospital, dedicate the February 8, 1938, issue to Dr. C. St. Clair Drake as follows:

DEDICATION

THIS EDITION IS REVERENTLY DEDICATED TO
THE MEMORY OF DR. C. ST. CLAIR DRAKE

whose service to the State of Illinois marks him
as an outstanding public official.

After having been with the Chicago Health Department for twenty years, Dr. Drake was appointed Director of the Department of Public Health of Illinois in 1913. He completely organized and expanded its sphere of activity, so much so as to place Illinois in the front rank and attract national acclaim.

After serving two governors, he resigned to become an active member of the American Public Health Association of New York City.

In 1929, following the death of Dr. Hill, Governor Emmerson placed him at the head of the venerable Jacksonville State Hospital which he immediately divested of the traditions to which it clung through three generations. Not only were its buildings remodeled and grounds re-landscaped, but Mrs. Drake employed her fine taste in interior decoration so that from an obsolete and gloomy interior it now presents an atmosphere of cheerfulness which even the dullest inmate appreciates.

Mrs. Drake's influence extended to the other institutions to their marked improvement.

Dr. Drake died on June 2, 1935, and although he attained the age of 64, it is felt that he was capable of rendering many years of valuable service.

GEO. A. ZELLER, M. D.

PENSIONS FOR PHYSICIANS

Chicago, March 17, 1938.

To the Editor: In these days of social security programs and old age pension systems, it behooves the doctor to see where he fits in the picture. Just what is the doctor's life? Assuming he graduates from internship at twenty-five, which is younger than most, and hangs out his shingle, he has ten years to get established. These are ten years of trial and error. Ten years in which he tries to find himself and years in which he is only conservative because of lack of knowledge and ability, especially so in surgery. From thirty-five years of age to forty-five, a period of efficiency arrives in which he is inclined to be radical and perhaps a bit over ambitious. However, in these years he makes a deal of money. After forty-five and up to sixty is the golden age for physicians and surgeons. He has gained a great fund of knowledge and a wealth of experience lies back of him. These years he does his best work and becomes a bit more conservative. Guided by his knowledge and experience he is less apt to take new things or methods without plenty of time and experiment to guide his judgment. In these years he may earn bigger fees but usually he does less work. His conservative attitude inclines him more toward a prophylactic regard for his patients. When he reaches the age of sixty it is time to stop and take stock of himself. At this period less work and more leisure should be the rule and frequent vacations. The more difficult medical and surgical patients should be referred to younger men and his attitude should be more of a consultative one. At this time the question of pensions and annuities comes up. Assuming he has been a successful practitioner he should have an independence; but not all are. Ill health, financial misfortune, heavy expenses and other causes may make him entirely dependent on what he earns.

My suggestion would be that the American Medical Association or state medical society have a pension fund into which the doctor pays during the years of active practice. No insurance company as far as I know has anything with the features of a pension fund. Also the doctor is more inclined to pay into a medical fund especially if the amount is little.

Insurance company annuities are expensive and have death benefits and other features that do not pertain to old age. Pensions should be

for old age only or at least not before sixty or sixty-five.

Having a medical society pension fund would be stealing a march on the "state medics" who as a lure to their program offer old age pensions.

A. H. HAUBER, M. D.

4058 Melrose St.

SOME IMPRESSIONS OF MEDICAL PRACTICE IN RUSSIA AND POLAND

Dr. Anthony J. Linowiecki of Chicago, in the March issue of the *Bulletin of the North Shore Branch of the Chicago Medical Society*, says:

At the time that we received our little booklets containing our meal tickets and hotel reservations for Russia, we received a slip of paper saying that as soon as we crossed the border we were guests of the government. Of course, this can be explained in many ways. Many of us thought that we would have a brass band meeting us and that everything in the country would be at our disposal, however, we soon learned differently and were afraid that even with our visé we might not be allowed to enter the country.

We finally started for the border and we just about crossed the river when armed guards stationed themselves on the car platforms. We thought the government was going to give us a lot of protection, but as soon as we tried to visit from one car to the other we were held back and told to stay in our own compartment to which we were assigned. Finally taking up of passports and comparison of pictures on the passports took place. When you apply for a visé to Russia you must submit three pictures of yourself and your party and by the time you get to the border the authorities have these pictures and compare them with the ones on your passport.

When we got to the customs we were asked to step out of the cars taking only our clothing with us and that the guards would take care of our baggage. We were led into a room surrounded by custom officials and armed men. Our baggage was placed on a table and examined. All periodicals, movie films, newspapers and magazines were removed. Usually the periodicals are burned. All printed matter is confiscated. A microscopic search was made but it was best to say nothing.

Upon arrival in Leningrad we were met by buses and taken to the hotel. The hotel was very nice—all fitted out with furniture that had been

confiscated from the Czar's palace. The furniture was all upholstered in red velvet and we had a beautiful piano with gold legs in our room. Our guide explained to us that the government wanted all the people to enjoy what the royalty had enjoyed before—everyone is alike in Russia and there is no class distinction. In the hotels the meals are very good. On the second day we found the reason for this. A slip of paper had been left in our rooms with the following questions which we were to answer: 1. Do you find the food in Russia better than in any other country? 2. Do you find the hotel accommodations better than any country you have visited? We still had eight days to stay, so we said it was the best food and best accommodations that we had ever had.

The hospitals in Leningrad are in poor condition. All the buildings are old and just about ready to fall down. The reason for this is that it is a Harbor town right on the gulf of Finland. They barely put any money in improving the buildings. The hospital that we were in consisted of about six buildings, 4 stories high and one six stories high. It was entirely surrounded by a wall 20 ft. high. We went into the hospital and were assigned to different wards. The halls were filled with groups of patients and trays were scattered around. We were unable at any time to talk to the patients. They would shrug their shoulders, bow their heads and run off. There is a fear of being seen talking to a stranger. I tried to encourage a few in conversation, but with no results—they just walked away.

The surgery consisted of one large room with three operating tables and at one end of the room there were three sinks where the surgeons scrubbed. Just adjacent to these three operating tables was a long table on which the surgical instruments were placed by one scrub nurse. Most of these men have many assistants and the nurses are dispensed with except for the scrub or head nurse. The preparation of the doctors is much the same as we have in this country. They do not wear rubber gloves, however, part of their surgical preparation consists in painting the fingernails and finger tips with iodine. The doctors operate with bare hands and go into the abdominal cavity or brain, etc., without gloves. The only one wearing gloves is the sterile nurse and she wears regular household gloves that one sees worn by women at home. She takes the sterile instruments, hands them to the assistant and in

turn he hands them to the surgeon. The soiled instruments are then returned in their hands—handed to the nurse into the sterile gloves and she rinses them off and puts them on the table for the next one that may need them. They have no catgut for suturing and use linen for everything—enough linen to make a mattress. We asked what the end result was—morbidity if they did not want to tell us about mortality. We were unable to find out what effects so much linen in an abdomen had on these people. They informed us that statistics would be published at which time they would let us know.

We finally left Leningrad and got into Moscow. It is very modern being a capitol city. The buildings, hospitals, etc., are all quite modern. All of the building is done by women. Bricklaying, mortar mixing is done by women. The men walk around as soldiers and the women do all the heavy work. The lay people work five days a week and rest the sixth—there are no Sundays. They work 8 hours a day. In Moscow they have socialized medicine to the nth degree. The head doctor is head doctor in 52 hospitals and has 42 assistants, each one stepping up as they become proficient in their surgical work. They have no 8 hour day for the doctors—no hours, no rest days and no pay. They are all paid by the government.

For spastic torticollis they expose the upper part of the spinal cord. They cut 1-2-3 cervical nerves and the accessory nerve and get nice results. The spastic torticollis clears up and the patient is comfortable. In lung abscess they aspirate and fill the cavity with paraffin. In T. B. they do the same as we do—lobectomy or thoracoplasty. In recurrent gastric ulcer they do gastrectomy. At the present time they were interested in trying to find out some means of doing away with the post operative reaction of ether and were running a series of electrical experiments with rabbits.

In Poland hospitals are more on the American style. The United States atmosphere prevails all over. Most of them have copies of our literature and many of them have come to this country and taken away with them a lot of our ideas and put them in their institutions. Most of the hospitals are managed by nuns and they are all kept very clean. Their general O. R. technique is the same as ours except that they have no fine rubber gloves but use household gloves. They do nice work except for the fact that their gloves are

clumsy and difficult to work with. They have plenty of catgut and use it freely.

In cholelithiasis they do a cholecystectomy. Very little drainage is used. They are not very free with their gastrectomy operations for recurrent gastric ulcer. They try to treat their patients medically and also do gastro-enterostomy.

We were surprised to find in one of these hospitals two men who were graduates of schools in Chicago. They informed us that there were many American doctors working there. This, of course, accounted for the hospital management and work that was so American.

WOMAN'S AUXILIARY TO THE ILLINOIS STATE MEDICAL SOCIETY

The State Board met Saturday, March 26th, at the Palmer House, Chicago. More than twenty members of the Board were present. Mrs. Herbert B. Henkel presided.

Plans for the State Convention, to be held in Springfield, May 17, 18 and 19, were discussed. The meetings promise to be interesting and enjoyable. We hope many doctors' wives not affiliated with an Auxiliary at present will learn of our work.

The resignation of our President-elect, Mrs. A. H. Baugher, was read. It was accepted with regret. Mrs. William Raim, treasurer of the Illinois State Auxiliary at present, was chosen to fill the office.

Mrs. Seron, of Joliet, chairman of the Exhibit Committee, gave her report of the progress of the exhibit for the Auxiliary to be presented at the Hall of Health at the Springfield Convention.

PERRY-RANDOLPH

We are very happy to welcome a new Auxiliary to the list of Illinois counties already organized.

This newest addition to our ranks is Perry-Randolph. Mrs. R. A. May of Chester is president.

COOK

The April meeting of Cook County Auxiliary promises to be most enjoyable. To be held Wednesday, April 6, 1938, at the Chicago Woman's Club. Dr. Robert Hayes, President-elect of the Chicago Medical Society, will speak on *Recent Trends in Medicine*. Dr. Joshua L. Liebman will speak on *The Citadel* and *Madam Curie—a Comparison in Contrasts*. Mrs. Harry J. Dooley is President.

COOK-AUX PLAINES

Aux Plaines Branch was honored to have as their guest, March 25, State President Mrs. Herbert B. Henkle. She spoke a few words, urging the members to unite in a new spirit of loyalty.

Dr. Carolyn MacDonald spoke on *Seven Cycles in a Woman's Life*.

Plans for the April meeting, annual meeting day, were completed. A tea, following the meeting, is to be held at the new home of the Art League.

KNOX

President—Mrs. Charles A. Ross, Galesburg.

Vice-President—Mrs. G. C. Klein, Galesburg.

Secretary—Mrs. Wm. Johnson, Galesburg.

Treasurer—Mrs. H. E. Graham, Galesburg, Ill.

Following is a brief resume of the meetings held this year:

September—Mrs. E. C. Franing, speaker.

October—Dr. Birmingham, speaker.

December—Sewing for V. N. A. *Hygeia* play read by Mrs. C. G. Bower and Mrs. F. Maley.

January—Sewing for V. N. A. Speaker, Mrs. Louis Gard.

February—Book review, "Life of Marie Curie."

ST. CLAIR

President—Mrs. R. F. Stanton.

First Vice-President—Mrs. F. C. Spitze.

Second Vice-President—Mrs. C. C. Winning.

Recording Secretary—Mrs. C. C. Kane.

Corresponding Secretary—Mrs. Mary Rendleman, East St. Louis, Ill.

Meetings are held the first Thursday of each month at 8:30 p. m., at St. Mary's Hospital Auditorium, except a few home meetings.

October—35 members present.

Rev. B. J. Koehler of Belleville, Ill., spoke on *Relations of Religion to Medicine*.

November—41 members present.

An afternoon tea at the home of a member. Mrs. A. Mathes gave a talk on *Hooked Rugs*. A class of members has learned to hook rugs.

December—38 members present.

Pot luck supper and Christmas party. Supper served at 6:30. The doctors returned to their offices and the members enjoyed a program of Christmas carols and readings. Christmas gifts were exchanged.

January—30 members present.

Mrs. Geo. McFadden reviewed the book *Paradise*, by Esther Forbes.

February—31 members present.

Prof. J. G. Waterston spoke.

March—28 members present.

Debate by members:

Resolved, That a Dutiful Wife Should Wait on Her Husband.

April 7—Annual Laity Day Tea.

April 29—Annual Benefit Card Party.

At the conclusion of the evening meetings in St. Clair County, the men join their Auxiliary members for refreshments.

Plan to attend the Convention! Springfield, May 17, 18 and 19.

(Mrs. C. Otis) Louise W. Smith,
Chairman Press and Publicity.

Will-Grundy District Number 11

President.....Mrs. H. S. Worthley, Joliet

First Vice-President.....Mrs. J. E. Duffy, Joliet

Second Vice-President....Mrs. V. J. Cohenour, Joliet

Secretary.....Mrs. Bernard Klein, Joliet

Treasurer.....Mrs. L. J. Wilhelm, Joliet

February 14 was the date for the meeting of the Will-Grundy Medical Society, at the home of Dr. and Mrs. Bert Wilcox. This meeting was a dessert luncheon. Valentine decorations were used. Mr. H. B. Henkel, State President, spoke briefly on Auxiliary Problems. Mrs. A. F. Gareiss, State Hygeia Chairman of Joliet, explained the work being done in enlarging the number of Hygeia readers.

Livingston District Number 2

President.....Mrs. J. G. Young, Pontiac
Vice-President.....Mrs. Homer Parkhill, Pontiac
Secretary-Treasurer....Mrs. Frank Bowden, Pontiac

In September the Auxiliary entertained their husbands at a picnic at Riverview Park. Forty-one attended this meeting.

An interesting December meeting was held, when Mrs. H. B. Henkel, State President, and Vice-President Mrs. Davies of Spring Valley were the guests. Mrs. Henkel spoke to the group. Following her talk the play *Frank and Erna* was presented by a Pontiac High School group. This was a Laity meeting, and presidents of clubs and organizations attended.

Sangamon District Number 5

President.....Mrs. S. R. Magill, Springfield
Vice-President.....Mrs. O. E. Ehrhardt, Springfield
Secretary.....Mrs. J. E. Reisch, Springfield
Treasurer.....Mrs. W. R. Louis, Springfield

Mrs. S. R. Magill was installed president of the Woman's Auxiliary of Sangamon County Medical Society, at a tea at the home of Mrs. H. B. Henkel, last May. The State Convention activities were discussed.

In September, the work was resumed in earnest. The report of the National Convention was given by Mrs. H. B. Henkel. Excerpts from *Hygeia, Illinois Medical Journal*, and the *Health Messenger* were presented by Mrs. A. E. Steer and Mrs. Lyman B. Stewart.

In October, Mrs. Magill was hostess to the group. Mrs. Nelson Chesnut reviewed *Fifty Years in Medicine and Surgery*.

The November Meeting was held at the Abraham Lincoln Hotel. Dr. Paul Harmon of the Public Welfare Department, Dr. Lyman B. Stewart of the Sangamon County Medical Society, and Dr. Kenneth Schnepf were guests. Dr. Stewart spoke on venereal diseases. Dr. Harmon presented an interesting illustrated talk on poliomyelitis and Dr. Schnepf spoke on the treatment for bunions.

The November meeting was presided over by Mrs. Magill, president. Mrs. Harry Otten gave an account of the State Board Meeting, held November 20 in Chicago. A report was given by Mrs. D. J. Lewis on *Hygeia*.

In December, this group met and reports of vital and interesting articles in *Hygeia* and *Health Messenger* were presented.

The above excerpts of meeting accounts proves that this enterprising group is following the principles that mean Auxiliary purpose—that is educational activities first and yet all enjoy the social hours more because

of the instructive and informative helps received. Success to you!

Cook County

Woman's Auxiliary to the Chicago Medical Society met Wednesday, March 2 at the Chicago Woman's Club. This was a guest luncheon and members brought friends.

A Travelogue of six European countries was given by Mrs. Harvey S. Olson, illustrated with colored motion pictures.

Mrs. Clyde H. Landis is doing an excellent piece of work as Press and Publicity Chairman of Cook County Auxiliary.

Aux Plaines Branch Woman's Auxiliary to the Chicago Medical Society held their February meeting, February 25. This meeting was at Rosary College, River Forest. A tour of the college and a musical program by some of the students was enjoyable. Tea was served. The meeting was attended by more than sixty members and guests.

We hope to receive more county news. Please send activities, pictures, and plans. We want to know what everybody is doing this year.

LOUISE W. SMITH,
(Mrs. C. Otis),

Chairman Press and Publicity.
1012 Pleasant St., Oak Park, Illinois.

CHICAGO MEDICAL SOCIETY SPECIAL Enroute to the AMERICAN MEDICAL ASSOCIATION CONVENTION

San Francisco, Calif., June 13-17

MAKE ARRANGEMENTS TO JOIN OUR GROUP AND ENJOY
THE PRIVILEGE OF TRAVELING WITH YOUR PROFESSIONAL FRIENDS ENROUTE

For the comfort and convenience of members of the Chicago Medical Society, their families and friends, special arrangements have been completed with the "MILWAUKEE ROAD," Union Pacific and Southern Pacific Rys. for the operation of a DeLuxe "CHICAGO MEDICAL SOCIETY SPECIAL" train, to leave Chicago from the New Union Station, Canal and Adam Sts., at 9:00 P. M. Thursday, June 9, arriving San Francisco at 8:30 A. M., Sunday, June 12.

The "CHICAGO MEDICAL SOCIETY SPECIAL" will be composed of the most modern type Pullman air-conditioned standard sleeping cars with lowers, uppers, compartments, drawing rooms, single and double bedrooms, club-lounge and observation car features, and all the refinements associated with a de-luxe type special, including diner service choice foods appetizingly prepared at moderate prices.

Train will be operated on a fast schedule, and no excess fare will be involved, regular rates applying throughout. Sleeping car rates for accommodations from Chicago to San Francisco, will be as follows:

Lower berth, \$15.75; upper, \$12.60; compartment, \$44.50; drawing-room, \$56.00; single bedroom, \$28.35 and double bedroom, \$31.50.

The first-class round trip reduced rate rail fare going via route of our Special and returning via either Los Angeles or via Portland and Seattle will be \$90.30 and if return is desired via the Canadian Rockies fare will be \$95.30.

The trip to San Francisco, our Convention City, offers a splendid opportunity to combine same with an extended vacation tour. California and the wide open spaces of the Great West offer unlimited possibilities for enjoyable and beneficial recreation and sightseeing.

An itinerary in which interesting variations of return routes are briefly outlined is in the printer's hands and if you are interested in receiving a copy we will be glad to mail same upon receipt of your request.

Reservations on our "Special" will be gladly accepted at any time and same will receive our most careful attention and if there is any particular return schedule that you would like to have prepared covering other routes and stopover points, please feel free to address an inquiry to us.

DR. FRANK P. HAMMOND, Chairman,

DR. HOMER K. NICOLL,

Transportation Committee.

DR. GEORGE W. POST, President.

DR. ROBERT H. HAYES, Pres.-Elect.

DR. FRANK F. MAPLE, Secretary.

VICTOR L. HITZFELD,

Chairman, Train Arrangements, Chicago Medical Society, 30 N. Michigan Ave., Chicago, Ill.

GOLFERS SPECIAL TO SAN FRANCISCO IN JUNE

The "Golfers Special" will bring medical-golfers and their families to San Francisco in a most pleasant way. This American Medical Golfing Association tour includes an ocean voyage from New York to New Orleans (six days) on the S. S. Dixie, sailing June 1. First game of golf will be played in New Orleans on June 7, followed by four games on excellent courses on the out-going trip, with stops and sight-seeing at Houston, Galveston, San Antonio, Los Angeles (including luncheon with Hollywood stars), and beautiful Del Monte, Calif.

The Twenty-fourth Tournament of the American Medical Golfing Association will be held at the luxurious San Francisco Golf and Country Club on Monday, June 13, 1938. This is a thirty-six hole annual competition.

The return journey of the "Golfers Special" will be thru Portland, Seattle, Vancouver, Lake Louise and Banff, with two additional games of golf, more sight-seeing, and a steamship voyage up Puget Sound.

TOUR IS IN THREE PARTS

If you can't spend the time for the ocean voyage from New York, join the Golfers Special at New Orleans on June 7.

If you can't join the Golfers Special on the trip to San Francisco, plan on taking the return journey through the glorious Northwest, Vancouver, Lake Louise and Banff.

Non-golfers as well as golfers (and their ladies) are invited to take advantage of this wonderful trip.

For full particulars on the Golfers Special, and on the A. M. G. A. tournament in San Francisco, write Bill Burns, Executive Secretary, 731 N. Capitol Avenue, Lansing, Michigan.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY EXAMINATIONS

The oral, clinical, and pathological examinations for Group A and Group B applicants will be held in San Francisco, California, on Monday and Tuesday, June 13 and 14, 1938.

An informal dinner for the Diplomats of this Board, their wives and others interested in the work of the Board, will be held at the Palace Hotel, San Francisco, on Wednesday evening, June 15, 1938, at seven o'clock. Dr. William D. Cutter, Secretary of the Council on Medical Education and Hospitals of the American Medical Association, will address the group, and the successful candidates of the preceding two days' examinations will be introduced in person. Tickets, at \$2.25 each, may be obtained in advance from Dr. Joseph L. Baer, 104 S. Michigan Avenue, Chicago, Illinois, or at the door. Reservations should be made in advance if possible.

Application blanks and booklets of information may be obtained from Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburgh (6), Pennsylvania.

INDUSTRIAL PHYSICIANS ANNOUNCEMENT

Of special interest to every physician and surgeon of this country is the program of the American Association of Industrial Physicians and Surgeons 1938 meeting.

To broaden the interest in industrial medicine to the end of minimizing the morbidity and mortality of working people; reducing accidents and the number of deaths or cripples resulting therefrom; removing the hazards of occupational diseases, and keeping more people on the jobs in healthy condition—all these are naturally of vital interest to the physician or surgeon in general practice, for they mean more wage earners to assume and take care of more medical care for their respective families.

Acquaintance with industrial medical problems such as these is increasingly important to every physician and surgeon whether he be exclusively in private practice or identified, in whatever relation, with industrial practice. Thus, he will do well to mark on his calendar June 6, 7, 8, 9, 1938, for this meeting of the American Association of Industrial Physicians and Surgeons, which will be held concurrently with the Midwest Conference on Occupational Diseases at the Palmer House in Chicago. The field of industrial medical practice is increasingly prolific of broader opportunities and closer cooperation with physicians and surgeons in every specialty and in every locality.

Scientific and technical exhibits will be a feature of this important and instructive convention, and any

reference to exhibits should be addressed to A. G. Park, Convention Manager, 540 North Michigan Avenue, Chicago.

STATE DEPARTMENT OF PUBLIC HEALTH
EDUCATIONAL COMMITTEE, ILLINOIS
STATE MEDICAL SOCIETY

POST-GRADUATE COURSE IN OBSTETRICS AND PEDIATRICS
GIVEN BY THE DEPARTMENTS OF OBSTETRICS AND
PEDIATRICS AT THE RESEARCH AND EDUCATIONAL HOSPITAL

1819 WEST POLK STREET, CHICAGO, ILLINOIS

Beginning every Monday morning at 9:00 for one week, beginning July 5 and continuing through July and August.

Obstetrics. The courses will be given at the Research and Educational Hospital, and will consist of outpatient dispensary clinics, special lectures, manikin course, and special clinics together with delivery room observation courses and home deliveries in the outpatient service. Opportunity will be afforded for round table discussions of complicated cases occurring in the practice of the members of the course. Opportunity will be provided for work in diagnosis of presentation, position, taking of measurements on living patient in the dispensary together with complete case history-taking, with discussion of the diagnosis and prognosis by members of the staff. Various obstetrical operations on the manikin will be performed under supervision. Such operative procedures as are indicated will be demonstrated to the whole group during their stay on the service. Ward walks will be given in the obstetrical wards during which antepartum and postpartum complications will be discussed by members of the staff of the College of Medicine. Speakers to be invited for lectures from other universities in the city will cover special subjects.

Pediatrics. The pediatric course will cover outpatient clinics in the Research and Educational Hospital, ward walks and special lectures. Extra time can be devoted to pediatrics by members of the group who wish that privilege.

Registration fee—ten dollars—checks payable to University of Illinois.

Registrar, G. R. Moon, 1853 W. Polk Street, Chicago, Ill.

ILLINOIS TUBERCULOSIS ASSOCIATION

PRELIMINARY ANNUAL MEETING PROGRAM

April 18 and 19, 1938

ILLINOIS HOTEL, BLOOMINGTON

Monday, April 18

10:00 A. M.—Registration.

11:00 A. M.—Annual Business Meeting. Presiding—Robinson Bosworth, M. D., President. Roll Call of Counties. Minutes. Treasurer's Report. Executive Secretary's Report. Election of Directors.

12:15 P. M.—Luncheon—Meeting of Board of Directors. Reports of Executive Secretary and Treasurer. Reports of Committees. Election of Officers.

12:12 P. M.—Kiwanis Luncheon. (All delegates are invited to attend). Special tuberculosis program to be presented. Speaker to be announced.

EDUCATIONAL SESSION

Presiding—Mrs. L. G. Freeman, Bloomington

2:15 P. M.—"Finding Early Tuberculosis by Tracing Contacts"—Miss Mary Southwick, Executive Secretary, McLean County Tuberculosis Association.

2:45 P. M.—"Tuberculin Testing and X-ray Demonstrations conducted by a Voluntary Association"—Mr. Albert Nicholas, President Jackson County Tuberculosis Association.

3:15 P. M.—"Tuberculosis Programs for Rural Counties with Small Budgets"—Mr. Charles A. Freck, Executive Secretary, Missouri Tuberculosis Association.

3:45 P. M.—"Adequate Tuberculosis Educational Programs"—Mrs. William R. Fringer, Executive Secretary, Winnebago County Tuberculosis Association.

4:15 P. M.—"Proper Administration of County Tuberculosis Associations"—Miss Rubye J. Mochel, Executive Secretary, Macon County Tuberculosis and Visiting Nurse Association.

4:45 P. M.—General discussion from the floor of all subjects presented.

8:00 P. M. ANNUAL FROLIC
Presented by Local Arrangements
Committee for all Delegates

Tuesday Morning, April 19

GENERAL SESSION

Presiding—Mr. Al. A. Ulbrich, President, McLean County Tuberculosis Association

9:15 A. M.—"Rehabilitation Programs for Voluntary Organizations"—Hugh Dugan, Chairman Rehabilitation Committee, DuPage County Tuberculosis Association.

9:50 A. M.—"Rehabilitation Programs in England"—Dr. F. M. Meixner, President, Peoria County Tuberculosis Association.

10:30 A. M.—"The Tuberculosis Problem in State Institutions"—Dr. Hugh A. Beam, Superintendent and Medical Director, Rock Island County Tuberculosis Sanatorium.

11:10 A. M.—"The Significance of the Ratio Between Tuberculosis Cases Reported and Tuberculosis Deaths Reported in Illinois"—B. K. Richardson, Chief, Division of Public Health Instruction, Illinois State Department of Public Health.

11:50-12:00—General discussion of subjects presented.

MEDICAL SESSION

Presiding—Dr. Arthur S. Webb, President, DuPage County Tuberculosis Association

2:00 P. M.—"Legal Regulations Governing Sanatorium Boards"—Dr. Robinson Bosworth, President, Illinois Tuberculosis Association.

2:30 P. M.—"Silico-Tuberculosis"—Dr. Henry C. Sweany, Chicago Municipal Tuberculosis Sanatorium.

3:10 P. M.—“Activation of Chronic Pulmonary Disease by Industrial Accident”—Dr. Leon C. Ives, Peoria.

3:50 P. M.—“The Importance of Early Diagnosis of Tuberculosis Among Industrial Workers”—Dr. D. O. N. Lindberg, Medical Director and Superintendent, Macon County Tuberculosis Sanatorium.

4:30 P. M.—“Medico-Legal Aspects of Pulmonary Diseases in Industry”—Dr. Roswell T. Pettit, Ottawa.

ANNUAL BANQUET

Tuesday Evening, April 19, 6:45 P. M.

ILLINOIS HOTEL

Toastmaster—Mr. Al. A. Ulbrich.

Invocation—Father Stephen Moore.

Welcome—Speaker to be announced.

President's Address—Dr. Robinson Bosworth.

Presentation of Seal Sale wards—W. P. Shahan.

Address—Dr. H. E. Hilleboe, State Board of Control, St. Paul, Minnesota.

OREGON STATE MEDICAL SOCIETY COUNCIL OPPOSES UNIONIZATION OF PROFESSIONAL GROUPS

“The council of the Oregon State Medical Society at a meeting in January adopted a statement of policy concerning attempts that have been made to organize established professional groups and groups of persons engaged in services supplementary to professional work into labor unions. Such efforts must be opposed, the statement says, in the interest of maintaining the freedom of action and initiative essential to carrying on and improving the standards of professional services. The statement points out that the principles and methods which may be legitimately employed by labor organizations are incompatible with the practice of a profession. Labor organizations have for their prime object the improvement of wages, hours and conditions of employment for their members; the medical profession has assumed the obligation of caring for the sick and injured, ‘without discrimination on account of racial, religious or other conditions of the kind, continuously and unflinching in peace, war, flood, fire, pestilence, come what may,’ the statement continues. ‘It must not put the compensation or convenience of its members before the public need. It would be unthinkable for the medical profession or any other group engaged in the healing arts to refuse to render the services it has undertaken to perform, to go on strike and prevent others from taking up its work.’ The Oregon State Federation of Professional Societies has also adopted a resolution to the effect that affiliation of its members with trade unions or similar organizations is incompatible with the obligations of professional men and women and hence detrimental to the public welfare. The federation is made up of the state dental association, graduate nurses’ association, medical society, pharmaceutical association, society of radiographers and veterinarians’ association.”

WHAT THE SURVEY GRAPHIC DID NOT SEE

A series of articles in the *Survey Graphic* denounces the American Medical Association for its criticisms

of the British panel system, and its authors claim that their investigations in England show that physicians and patients are practically unanimous in agreeing on the high quality of the service and the desirability of the system.

The *Survey Graphic* must not have taken into consideration the letters from panel physicians in the *British Medical Journal* during the past year, from which the following sentences are quoted:

What is the general practitioner in England today but a glorified first aid man? . . . It is a question . . . of getting as many patients as he can on his list and getting the consultations over as fast as he can.¹

I am convinced the majority of panel patients do not get full enough investigation. . . . I cannot do otherwise than rush them through. . . . I remember with dissatisfaction two carcinomata of the stomach recently diagnosed too late and a latent pulmonary tuberculosis labeled neurotic.²

The *Survey Graphic* writers assure us that panel and private patients receive the same service. But, a panel practitioner writes:

To pretend that panel and well-to-do private patients can be treated identically is to be an ostrich.³

Another practitioner says:

Until these offenses are wiped out, we shall never get rid of the sneering tone of patients and others when using the words “panel doctor” and “panel patient.”⁴

It is true, as the *Survey Graphic* writers say, that the medical profession has ceased to fight sickness insurance and is even urging its extension. The attitude of the British Medical Association was expressed in a paragraph from its formal statement to the Royal Commission in 1926:

The organization of a National Health Insurance scheme is not necessarily, or even probably, the best means of utilizing limited resources for the promotion of national health. It is more than likely that there are a number of other directions in which, severally or collectively, a corresponding expenditure would produce an even more satisfactory return.”

Eight years later Sir Henry Brackenbury said that this statement was still “regarded as true by the great majority of the medical profession today.”

The British medical profession has simply accepted the accomplished fact and recognized what the American Medical Association has so often said—that once the road of sickness insurance has been entered, such powerful vested interests, political and financial, are created that there can be no turning back. In the words of another panel practitioner, writing in the *British Medical Journal* since the *Survey Graphic* writers visited England:

The trouble is that at the end of a long winter's day we are too tired to fight. We gradually drift into the ways of our senior partners and regard it as our niche in life.

1. Brit. M. J. 2:562 (Sept. 12) 1936.

2. Brit. M. J. 2:650 (Sept. 26) 1936.

3. Brit. M. J. 2:786 (Oct. 17) 1936.

4. Supplement to Brit. M. J., Dec. 18, 1937, J.A.M.A. p. 373.

ILLINOIS STATE MEDICAL SOCIETY

NINETY-EIGHTH ANNUAL MEETING

SPRINGFIELD, ILLINOIS

May 17, 18, 19, 1938

WOMAN'S AUXILIARY PROGRAM

All general meetings and social activities are open to all doctors' wives.

Monday, May 16, 1938

1:00 P. M. Registration, Abraham Lincoln Hotel.

Tuesday, May 17, 1938

8:30 A. M. Pre-Convention Board Breakfast and Pre-Convention Board Meeting. Home of Mrs. H. B. Henkel, 2135 Wiggins Avenue.

9:00 A. M. Registration.

11:00 A. M. Round Table Discussions, Leland Hotel. Mrs. C. C. Winning, Chairman.

12:30 P. M. Public Relation Luncheon, Leland Hotel.

2:00 P. M. General Meeting, Abraham Lincoln Hotel.

4:30 to 5:30 P. M. Mansion Tea—Host, Hon. Henry Horner, Governor.

7:00 P. M. Bridge Dinner, St. Nicholas Hotel.

Wednesday, May 18, 1938

8:30 A. M. Board Breakfast, Downstate Members Hostesses, Abraham Lincoln Hotel.

9:30 A. M. General Meeting, Abraham Lincoln Hotel. Memorial Services, Mrs. Lucius Cole, Chairman.

1:00 P. M. President's Luncheon, Abraham Lincoln Hotel.

SOCIAL FUNCTIONS FOR ALL LADIES

Tuesday, May 17, 1938

12:30 P. M. Public Relation Luncheon, Leland Hotel.

4:30 to 5:30 P. M. Mansion Tea—Host, Hon. Henry Horner, Governor.

7:00 P. M. Bridge Dinner, St. Nicholas Hotel.

Wednesday, May 18, 1938

1:00 P. M. President's Luncheon, Abraham Lincoln Hotel. (Auxiliary)

7:00 P. M. President's Dinner and Dance. (State Society)

VETERANS' SERVICE COMMITTEE DINNER

The Annual Dinner of the Veterans' Service Committee will be held on Tuesday evening, May 17, 6:00 P. M. Dr. F. O. Fredrickson, Chairman of the Committee, will officiate as presiding officer. All physicians are invited.

Opening remarks by Department Surgeon—

Department of Illinois American Legion.

Remarks by the Department Commander of the Department of Illinois American Legion.

"If War Should Come, What Would be the Role of the Medical Profession?"

"From Standpoint of the National Guard"—Col. J. J. McKinley, Commanding Officer of the 33rd Division of Ill. National Guard.

"From Standpoint of the Reserves"—Col. Geo. D. Tarnowsky.

"From Standpoint of Regular Army"—Lieut. Col. Benjamin A. Brackenbury, Chemical Warfare Service.

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A CONFERENCE ON DISEASES OF CHILDREN

Jos. K. Calvin, *Chairman* Chicago

Gerald Cline, *Vice Chairman* Bloomington

H. W. Elghammer, *Secretary* Chicago

Tuesday Morning, May 17, 1938

SYMPOSIUM ON THE NEW BORN

"Feeding and Care of the Premature New Born" Julius H. Hess, Chicago
Discussion opened by T. F. Krauss, Rockford; and S. C. Henn, Chicago.

"Cyanosis in the New Born"
..... Arthur H. Parmelee, Oak Park
Discussion opened by Carl E. Sibilsky, Peoria; and Louis Minsk, Chicago.

"Feeding During the New Born Period" ...
..... Gerald Cline, Bloomington
Discussion opened by Ray C. Armstrong, Champaign; and John McDavid, Oak Park.

"Icterus and Anemia in the New Born"
..... Walter M. Whitaker, Quincy
Discussion opened by Gerard N. Krost, Chicago; and John Carey, Joliet.

PEDIATRIC PAPERS BEFORE OTHER SECTIONS

SECTION ON MEDICINE

"Pneumonia in Childhood".....
.....James B. Gillespie, Urbana

SECTION ON SURGERY

"Intussusception"
.....Philip Rosenblum, Chicago

SECTION ON EYE, EAR, NOSE AND THROAT

"Pediatric Treatment of Otologic Sepsis Including Meningitis"
.....Philip Aries, Chicago

SECTION ON PUBLIC HEALTH AND HYGIENE

"Hemolytic Streptococcus Cultures and the Dick Test in Relation to Scarlet Fever" ...
.....John A. Bilger, Highland Park; and Silber Peacock (deceased), Chicago

SECTION ON RADIOLOGY

"Radiologic Aids in the Diagnosis of Heart Disease in Children".....
.....Edmund G. Lawler, Chicago
OBSTETRICIANS' & GYNECOLOGISTS' MEETING
Subject and Essayist to be announced later.

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OBSTETRICIANS' & GYNECOLOGISTS' MEETING

F. L. Heinemeyer.....*Chairman*
Wm. T. Carlisle.....*Secretary*

Tuesday Morning, May 17, 1938

"Progress in Maternal Welfare".....
.....Harold H. Hill, Oak Park

"Prenatal Care"...Wm. C. Danforth, Evanston
Discussion opened by Ralph R. Loar, Bloomington.

"Obstetric Diagnosis"
.....David S. Hillis, Chicago
Discussion opened by Wm. Cooley, Peoria.

"Myomectomy During Pregnancy"
.....Ralph Reis, Chicago
Discussion opened by Wm. O. McQuiston, Peoria.

"Post Natal Complaints in 1,000 Consecutive Cases"Wm. A. Simunich, Chicago
Discussion opened by Otto H. Crist, Danville.

"Endocrine Therapy of Menopausal Disorders"
.....Phillip F. Schneider, Evanston
Discussion opened by Wm. O. McQuiston, Peoria.

"Tuberculosis of the Cervix Uteri".....
.....Herbert Schmitz and Clyde Geiger
General Discussion.

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SECRETARIES' CONFERENCE

John W. Long, *Chairman*.....Robinson
D. D. Monroe, *Vice-Chairman*.....Alton
A. R. Brandenberger, *Secretary*.....Danville

Tuesday Morning, May 17, 1938

9:00—12:00

"Medical Care for All of the People".....
.....R. K. Packard, Chicago
Discussion opened by E. S. Hamilton, Kan-
kakee.

"The Importance of the Business Meeting"..
.....R. T. Pettit, Ottawa
Discussion opened by C. W. Magaret, Peoria.
"The Work of the Educational Committee"..
.....J. H. Hutton, Chicago
Discussion opened by Harlan English, Dan-
ville.

"The Future of the County Medical Society"
.....S. E. Munson, Springfield
Discussion opened by C. S. Skaggs, East
St. Louis.

"Education of the Public by the County Med-
ical Society".....W. W. Bauer, Chicago
Discussion opened by T. B. Knox, Quincy.
"How the County Medical Society Can Aid
the Legislative Committee".....
.....John R. Neal, Springfield
Discussion opened by W. H. Schowengerdt,
Champaign.

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CENTRAL STATES SOCIETY OF INDUS- TRIAL MEDICINE & SURGERY

Frederick W. Slobe, *President*.....Chicago
Don Deal, *Vice-President*.....Springfield
Frank P. Hammond, *Secretary-Treasurer*....
.....Chicago

Tuesday Morning, May 17, 1938

James J. Callahan, *Program Chairman*.....
.....Oak Park
"Medico-Legal Trends in Occupational Dis-
eases" (Lantern Slide Demonstration)....

.....C. O. Sappington, Chicago
In this annual review of medico-legal experiences
with occupational diseases, statistical comparisons will
be made of the 1936 and 1937 figures with regard to
compensation cases and court decisions in various states.
As will be demonstrated, there are great differences.

Reference will be made to the present legislative requirements relative to coverage, and the rights of employers and employees, particularly with respect to common law actions and the availability of common law defenses. Because dust diseases continue to be important and cause the greater number of decisions, this type of occupational disease will be considered separately.

The common occupational diseases for which provisions are generally made in different states will be mentioned, and the relationship of the physician and surgeon discussed.

Summary and recommendations will provide a basis for future medical and legal procedures in this important field.

"Recognition of Early Tuberculosis in Industry" James A. Britton, Chicago

Every doctor who is interested in and particularly those doing industrial medicine know the value of early diagnosis of diseases that may or may not be directly associated with the employment of the individual concerned. Early recognition of tuberculosis in industry is not, per se, the problem, for the good and sufficient reason that the employee may go or be sent to the doctor after full development of the disease yet be "early" recognized. Recognition of *early* tuberculosis is the topic under discussion and to that end I will confine my remarks.

"Industrial Solvents" Wm. D. McNally, Chicago

"Skin Affections in Industry, With Special Reference to the Value of the Patch Test" Cleveland J. White, Chicago

Industrial dermatoses constitute roughly about 60 per cent of industrial diseases, not including actual accidents. The dermatoses are largely made up of dermatitis venenata and eczematoid dermatitides. The causative agents in the production of dermatoses in the normal skin are usually contactants; these will be reviewed in detail and the diagnostic patch tests will be properly evaluated. In eczematoid lesions the possibility of a preceding infectious agent, like ringworm, has to be considered and consequently the lesions produced by superficial fungus infections will be described. More and more non-eczematoid lesions are being observed, a specific example being the production of acneform eruptions by oils and certain types of insulation. Irritants as the most common cause of industrial literature in the last five years will also be presented, whether the irritant be mechanical, vegetable, chemical or infectious as bacterial and fungus.

Tuesday Afternoon, May 17, 1938

Session in conjunction with the Surgical Section of the Illinois State Medical Society.

"Traumatic Lesions of the Spleen" Chester C. Guy, Chicago

"Injuries of the Right Upper Abdominal Quadrant" . . . Philip H. Kreuscher, Chicago

Various sections of the Illinois State Medical Society's Convention will continue through Thursday Noon, May 19, 1938. Our membership is invited to remain and visit the section of choice.

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PHYSICIANS' ASSOCIATION—DEPARTMENT OF PUBLIC WELFARE
STATE OF ILLINOIS

G. A. Wiltrakis. *Chairman*
J. W. Klapman. *Secretary*

Tuesday Morning, May 17, 1938

9:00—12:00

"Study of the Treatment of Epilepsy" Rudolph G. Novick, Jacksonville

The problem of epilepsy, viewed from any angle,—medical, social or economic—is a widespread and serious one. Yet, it has, comparatively speaking, been very much neglected.

Twenty-five cases of epilepsy have been studied. On the basis of mentality, these cases were divided into three groups and then placed on bromide, a combination of bromide and luminal, and luminal therapy. The data, obtained, reveals some interesting facts and shows the definite need for additional work on the subject of epileptic medication.

Discussion opened by Isidore Finkelman, Chicago.

"Huntington's Chorea as a Psychiatric and Social Problem in Illinois" . . . Eugene I. Falstein and Theodore T. Stone, Chicago

An exhaustive study of Huntington's chorea has been made in the State of Illinois. Fifty-five cases of the disease, admitted to the Elgin State Hospital since 1900 have been studied in detail. In addition, reports from all of the other Illinois state hospitals, as well as the annual reports of the statistician of the State of Illinois, have been utilized. The paper reveals the present day status of Huntington's chorea in Illinois from the standpoint of incidence, distribution, age, sex, marital status, race, nationality, transmission, and finally the social and eugenic importance of the disease.

"Evaluation of the Newer Treatments of Dementia Praecox" . . . D. Louis Steinberg, Gert Heilbrunn and Erich Liebert, Elgin

Insulin-shock therapy and convulsive therapy with metrazol in dementia praecox were introduced at the Elgin State Hospital, more than a year ago. About 120 patients have received insulin treatment and more than 200 have been treated with metrazol.

The physiological action of insulin and metrazol on the central nervous system, on the blood constituents, and on the metabolism are discussed, and the action of both treatments compared. Findings in animal experiments regarding the occurrence of pathological changes

in the central nervous system are briefly presented, especially with regard to their value for clinical procedure.

Evaluation of both treatments: 1—Duration of psychosis. 2—Results obtained in paranoid, catatonic, hebephrenic, and simple dementia praecox. 3—The quality of recoveries and improvements obtained. 4—Occurrence of relapses. 5—Failure to respond to treatment.

Discussion of the dangers and contraindications of each treatment.

"Hypothyroidism." A — Non-Myxedematous

Hypothyroidism....George A. Wiltrakis,
Elgin and Anthony V. Partipilio, Chicago

A discussion of the classification of adult thyroid deficiencies is given together with a workable grouping into (a) hypothyroidism, without myxedema, (b) myxedematous hypothyroidism and (c) non-myxedematous hypothyroidism. The latter term being restricted to the severe hypothyroidisms with a B.M.R. below —30% and an absence of clinical signs of myxedema.

Obesity is not a necessary symptom of a hypo-functioning thyroid. Underweight may occur.

A case is reported of a thin male, with a marked fatigability, a B.M.R. of —45% and a psychosis of a schizophrenic nature. Under thyroid therapy, the B.M.R. returned to normal, the patient gained 67 pounds and improved mentally.

B — Myxedematous Hypothyroidism Associated with Psychosis.. Abraham Simon, Elgin

The variation in reaction pattern in cases of myxedema with psychoses is attributed to differences in hereditary, constitutional and environmental background. Elderly patients with involutinal and cerebral arteriosclerotic changes are prone to develop an organic type of psychoses with paranoid trends. This type of psychoses was observed in two of the cases who developed myxedema at the involutinal period of life. One case of schizoid personality, following thyroidec-tomy developed myxedema associated with a schizophrenic psychoses and following thyroid therapy recovered mentally and physically.

Discussion opened by James H. Hutton, Chicago.

"Amaurotic Family Idiocy"..Harry B. Fitz-Jerrell and Bernard B. Neuchiller, Dixon

Case reports are given of two brothers suffering with this disease, together with the postmortem findings of one of the cases. A very striking similarity of the symptomatology, the morphology, and the course of this disease was noted in these two patients.

The paper includes a discussion on the etiology, pathology, and symptomatology of Amaurotic Family Idiocy.

"Diarrhea as an Institutional Problem." A Review of 1,354 Cases.....Louis H. Block, Chicago; and Bernard L. Greene, Elgin

Diarrhea occurring in institutions, especially mental, is not new, but the high incidence, its morbidity, and mortality is so significant that it warrants considerable more attention than it usually receives. It is a symptom-complex of many infectious, parasitic, organic, and functional disturbances.

For the past three years an intensive study has been undertaken at the Elgin State Hospital of 1,354 cases. Of the total number seen, 1,101 were bacillary in origin, the remainder being attributable to fourteen other causes. These diagnoses were based upon 5,000 sigmoidoscopic examinations, complemented by over 2,500 cultures and agglutination tests.

Discussion opened by Lloyd Arnold, Chicago.

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MEETINGS OF THE HOUSE OF DELEGATES

Tuesday Afternoon, May 17, 1938

- 3:00 First meeting of the House of Delegates called to order by the President, R. K. Packard, for Reports of Officers, Councilors, Committees, appointment of Reference Committees, Introduction of Resolutions, and for the transaction of other business which may come before the House.

Thursday Morning, May 19, 1938

- 9:00 Second meeting of the House of Delegates called to order by the President for the Election of Officers, Councilors, Committees, Delegates and Alternates to the American Medical Association, Reports of Reference Committee and action on same, Action on Resolutions, and for the transaction of other business to come before the House.

GENERAL SESSIONS

OPENING MEETING

Tuesday Afternoon, May 17, 1938

- 1:00 Ninety-Eighth Annual Meeting officially opened by the President, R. K. Packard, Chicago.
1. Invocation.
 2. Address of Welcome.
 3. Report of Chairman, Committee on Arrangements, Harry Otten, Springfield.
 4. Adjournment for Oration in Medicine.
- 1:30 Oration in Medicine.
(Subject to be announced)

George Draper, Associate Professor of Medicine, Columbia University, College of Physicians and Surgeons, New York.

Wednesday Morning, May 18, 1938

11:00—Oration in Surgery. "Breast Tumors".....Irvin Abell, President-Elect, American Medical Association, Clinical Professor of Surgery, University of Louisville, School of Medicine, Louisville

Wednesday Afternoon, May 18, 1938

1:30 President's Address—(Subject to be announced).

R. K. Packard, President, Illinois State Medical Society, Chicago.

Thursday Morning, May 18, 1938

Induction of the President-Elect.

Immediately after the closing of the meeting of the House of Delegates, S. E. Munson will be inducted into the office of President of the Illinois State Medical Society by the retiring President. All members and guests are urged to attend this interesting function.

SECTION PROGRAMS

SECTION ON MEDICINE

Cecil M. Jack.....Chairman
Robert Keeton.....Secretary

Tuesday Afternoon, May 17, 1938

Knights of Columbus Building
Columbus Hall

2:30—"The Diagnostic Value of Sternal Marrow Aspirations".....
.....Louis R. Limarzi, Chicago

With increasing knowledge in the field of hematology it becomes more evident that a complete blood study should also include a study of the bone marrow. The blood picture does not always accurately reflect the underlying pathologic process that exists in the blood forming organs. Certain types of leukemia (aleikemic), obscure cases of anemia, conditions presenting thrombopenia, leukipenia or neutropenia, so called cases of "purpura hemorrhagica" as well as cases of splenomegaly and lymphadenopathy may be diagnosed by sternal marrow aspiration. The ease with which sternal marrow may be aspirated and the diagnostic and prognostic value that it offers suggests sternal puncture as a routine hematologic procedure.

Discussion opened by R. H. Young, Evanston.
3:00—"The Diagnostic and Prognostic Value of Erythrocyte Sedimentation Rate in General Practice".....J. B. Stokes, Pontiac

In determining the presence or absence of toxemia, as well as progress, the blood sedimentation test will be found very simple and of considerable diagnostic and prognostic value. It is not, however, specific, being affected by many acute, sub-acute, and chronic infections, and also by malignancy. Several methods of doing this test are being utilized, but Cutlers' technique, using .9 c.c. of blood and .1 c.c. 3% sodium citrate, seems entirely satisfactory. Very little equipment, other than that which every physician has in his office, is required, and only the reading at the end of one hour need be taken.

Discussion opened by Seymour J. Cohen, Chicago.

3:30—"Medical Treatment of Patients with Jaundice".....Sidney A. Portis, Chicago

Many patients are disabled with jaundice, which, for the most part, is due to disturbances in or about the liver. Occasionally, jaundice may be a symptom of some systemic disturbance other than liver disease. The purpose of this discussion is to discuss a safe and sane medical approach to the problem, taking into consideration what we know about the liver function at the present time and laying a special emphasis on when and when not to do surgery in these cases.

Discussion opened by Edgar M. Stevenson, Bloomington.

4:00—"Sulfanilamide—Its Use in General Practice".....Arthur A. Goodyear, Decatur

The general practitioner contacts many cases of Hemolytic Streptococcus Infection. Sulfanilamide acts in a specific manner on the Beta-Hemolytic Streptococcus in vivo. Its use in other hemolytic streptococcus infections, particularly Scarlet Fever and Erysipelas, is well established. Recent information has proved Sulfanilamide to be a valuable adjunct in the treatment of Gonorrhea and Malaria. Experience with the use of Sulfanilamide will be given, including a case report of a Beta-Hemolytic Streptococcus Meningitis with recovery.

Discussion opened by Eugene F. Traut, Chicago.

4:30—"Some Practical Suggestions in Venereal Disease Control".....A. J. Levy, Chicago

Information presented to the public concerning venereal disease control should aim at dispelling ignorance and timidity of masses, and familiarize them with the required confidential anonymous reporting system. Tactful methods in eliciting patient's cooperation are essential, first in treatment and second in tracing contacts and sources of infection. An organized system of inter-urban and inter-state reciprocity for follow-up of sources of infection is very significant in venereal disease control. Establish prophylactic stations to give a comprehensive course of instruction together with a course of actual drills in preventive measures for all youths.

Discussion opened by I. H. Neece, Decatur.

Wednesday Morning, May 18, 1938

Joint Session with Sections on Surgery and Radiology.

SYMPOSIUM ON INTESTINAL OBSTRUCTION

"Intussusception" . . Philip Rosenblum, Chicago

Intussusception is one condition in which a delay of a few hours in diagnosis may mean the life of the child. It occurs 3 to 1 in boys. The exact etiology is unknown. The typical acute case begins suddenly, usually in a previously healthy baby under one year and is characterized by intermittent attacks of pain, more or less shock, vomiting and blood or bloody mucous on rectal examination; also palpable sausage-shape mass.

The most frequent types are ileocaecal, ileocolic, ileoileal and colocolic.

Subacute and chronic varieties are more frequent in older children, the symptoms of which are less typical—anal bleeding often being absent. Roentgen Ray examination will reveal the obstruction.

Diagnosis of intussusception depends on a careful history and physical examination, if necessary under anesthesia. Treatment is surgical.

"Some Pharmacological Considerations of Intestinal Obstruction" . . Carl Dragstedt, Chicago

There are several aspects of the problem of acute intestinal obstruction that present questions of interest to the pharmacologist. There is the question of the nature of the action of drugs upon the intestine during the various phases in the progress of the obstruction syndrome from the early hypermotility to the late paralytic ileus and the rationale of the use of drugs having intestinal effects under various circumstances. There is also the question of the possible toxemia with its associated problems of the nature of the toxic substance, the route of absorption, and the possible effectiveness of anti-toxic therapy. Some observations and considerations of these phases of the obstruction problem will be discussed.

"The Pathogenesis and Diagnostic Symptoms of Intestinal Obstruction"

..... John A. Green, Rockford

A brief consideration of this subject from the standpoint of the various types of obstruction.

A review of the pathological changes that take place in the bowel wall, lumen and blood supply of the intestine: consideration of the formation of the destroying toxic substance that follow strangulation: the time of their appearance in different locations and in different types of obstruction. Consideration of early and late symptoms in the different types and the necessity for early recognition and early treatment.

"Some Physiological Principles Involved in Acute Intestinal Obstruction"

..... Lester R. Dragstedt, Chicago

Evidence will be presented, as a result of experimental work on lower animals, that the secretion of gastric juice and of pancreatic juice into the upper portion of the alimentary tract and its failure of reabsorption as a result of vomiting or of accumulation in the non-absorbing regions of the intestine, results in profound dehydration and alteration in the chemical composition of the blood plasma. These changes are most profound in acute obstruction in the upper portions of the intestine and are less significant in low obstruction.

Evidence will also be presented, as a result of experimental work on lower animals, that when the small intestine becomes distended, such as may be produced by complete obstruction, various types of toxic chemical substances may be absorbed from the intestine that are not absorbed by the normal mucosa. Direct experimental evidence has thus been obtained that in certain types of acute intestinal obstruction, a toxemia of intestinal origin may develop. The significance of these two factors, namely dehydration and alteration in the chemical composition of the plasma as a result of failure of reabsorption of the digestive juices, and toxemia as a result of the absorption of poisonous products from the intestine will be discussed in various types of clinical obstruction and in obstruction at various levels of the intestinal tract.

"Radiological Aspects of Intestinal Obstruction" James T. Case, Chicago

The radiological signs of acute and chronic intestinal obstruction are discussed in some detail, together with a description of the technical maneuvers needed in order to elicit the findings. Indications are considered. Contraindications are analyzed. Present day equipment generally available for the roentgenologist makes it possible to apply the roentgen method in practically all cases of suspected bowel obstruction. Special attention is given to ileus.

"The Surgical Treatment of Intestinal Obstruction" H. E. Ross, Danville

The wise selection and meticulous execution of a desirable operative procedure that takes into careful consideration the nature, location and extent of the obstruction is an absolute surgical requisite. The surgeon has at his disposal the following operative procedures in dealing with either type:

1. The disruption of constricting bands or adhesions.
2. Simple enterostomy or colostomy.
3. Exteriorization with the formation of an immediate or delayed fistula.
4. Entero-anastomosis about the obstructing pathology or excision of obstructed bowel with re-establishment of its continuity.

A simple operative procedure is always the one of choice despite possible future reconstructive surgery.

Wednesday Afternoon, May 18, 1938

Columbus Hall

2:30—"Pituitary Therapy in General Practice" . . Elmer R. Severinghaus, Madison, Wis.

The use of anterior-pituitary growth promoting extract in cases of dwarfism requires the demonstration that the epiphyses have not yet united with the long bones so that growth may still be expected. Such treatment is worth while for a considerable number of dwarfs before adolescence is well advanced. The other well developed aspects of anterior-pituitary therapy are in the stimulation of the sex-maturing processes. Indication for this consists not only of undescended testicles, poorly developed testicles and external genitalia, in the male; but also of poorly developed external and internal genitalia in the female, irregularities in the menstrual cycle, reduction in fertility when this can be explained by tissue studies as due to disturbance in the ovarian action. These pictures may or may not be associated with obesity of the Froehlich type. The obesity needs to be treated directly by diet limitation, however. The technique for making diagnostic differentiation in this field and for the use of the known anterior-pituitary extract will be presented with case demonstrations.

3:15—Report of Nominating Committee and election of Officers.

3:20—"The Value of the Electrocardiogram in Routine Examinations".....James B. Berardi, Dwight

The paper consists essentially of a review of 1,500 electrocardiograms setting forth their value in both routine examinations and in examinations where cardiac complaints are elicited. The facts presented illustrate the large number of cases who have cardiac pathology without the apparent symptoms, either subjective or objective. Many cases reveal severe cardiac damage which is later confirmed by autopsy or physical findings. It further stresses the importance of early diagnosis of cardiac conditions so that patient can readjust himself with special reference to his vocation before irreparable damage has been done.

Discussion opened by George Parker, Peoria.

3:50—"The Present Status of Insulin and Metrazol Shock Treatment of 'Functional Psychoses'".....Abraham A. Low, Chicago

The literature, with close to 2,000 "shock treated" patients reported on, is briefly reviewed. An analysis is given of a series of 130 patients treated by the author and his associates either with hypoglycemia or with metrazol or with both combined. Results, indications and counterindications, dangers and complications of the treatment are discussed. A comparative study is added of the results secured today with the shock treatments and those formerly obtained with other chemotherapeutic procedures.

Discussion opened by S. N. Clark, Jacksonville and J. V. Edlin, Chicago.

4:15—"Spontaneous Subarachnoid Hemorrhage".....Richard F. Herndon, Springfield

Spontaneous hemorrhage into the subarachnoid space produces a clinical syndrome distinct enough to be re-

garded as an entity. It occurs with sufficient frequency for every one to see more than an occasional case. The usual causes are intracranial aneurysms and arteriosclerotic changes in the cerebral vessel. The clinical picture and courses are so characteristic that a tentative diagnosis is usually possible which can be confirmed by spinal puncture. The course and treatment are described. Lantern slide demonstration.

Discussion opened by Garm Norbury, Jacksonville.

4:45—"New Knowledge of Chemistry of Nerve Physiology".....Emmet F. Pearson, Springfield

Much of the mystery concerning the chemical and physical changes which accompany nerve activity has been investigated and sufficiently solved in recent years so that the clinician may now have a working knowledge of the dynamics involved in muscular contraction, transmission of sensation, and altered function of the sympathetic and parasympathetic systems. The action of acetyl choline, potassium ions, calcium and adrenalin are described. The clinical importance of visualization of the "adrenergic" and "cholinergic" functions and an understanding of the "nocifensor" system of nerves is emphasized by case report.

Discussion opened by G. B. Smith, Alton.

Thursday Morning, May 19, 1938 Columbus Hall

Joint Session with Sections on Surgery; Eye, Ear, Nose and Throat; Public Health and Hygiene; and Radiology.

SYMPOSIUM ON DISEASES OF THE RESPIRATORY TRACT

9:00—"The Relation of Allergy to Diseases of the Respiratory Tract".....Tell Nelson, Chicago

The paper will deal with two phases of the subject, namely:

1.—The role played by infectious respiratory diseases such as pneumonia, bronchitis, etc., as an exciting cause of allergic phenomena in the potentially allergic individual, pointing out the errors often made by assuming these allergies to be on a bacterial basis, and

2.—The relationship of allergies, chiefly of the nasal and respiratory type to both the acute and the more chronic respiratory conditions as bronchiectasis and emphysema.

"Bronchoscopy in Relation to Diseases of the Respiratory Tract".....Paul H. Holinger, Chicago

Bronchoscopy serves a diagnostic and therapeutic purpose in diseases of the respiratory tract. Diagnostically, bronchoscopy permits direct specular examination of the tracheobronchial tree of a patient of any age. This aids in the interpretation of physical and roentgen

findings, but is not a substitute for either. Therapeutically, bronchoscopy is most frequently associated with removal of foreign or foreign bodies and intra-bronchial neoplasms, although establishing and maintaining drainage in pulmonary suppuration constitutes the most important phase of this subject.

"Bronchiectasis"...D. O. N. Lindberg, Decatur

The subject is reviewed, etiologically and diagnostically, from the standpoint of ectasias well prior to the development of the usually considered bronchiectatic symptom-complex characteristic of the advance case. The lipiodol roentgenogram, with varying exposure film techniques, is discussed and suggestions presented to provide for uniform criteria in the interpretation of the "plain" film. The role of bronchoscopy in diagnosis and treatment leads to a brief resume of the latter, especially for the earlier forms.

"Pneumonia in Childhood".....

.....James B. Gillespie, Urbana

The etiology of pneumonia in childhood with particular reference to bacterial causes will be presented. Advances made in serum therapy of this disease justify careful analysis of the causal organism in cases of pneumonia today. The symptomatology, clinical features and certain laboratory findings of the pneumonias will be discussed. Satisfactory methods for establishing the etiology and anatomic distribution of the lesion in children and more recent contributions to treatment of childhood pneumonia and its complications will be presented.

"Surgical Treatment of Pulmonary Tuberculosis".....Willard Van Hazel, Chicago

Surgery is an important adjunct in the treatment of pulmonary tuberculosis. Its wide acceptance is evidence of its effectiveness. Artificial pneumothorax therapy has been extended earlier and to more patients than formerly and its limitations create problems that can be overcome in a large measure by a variety of surgical procedures. These procedures too have undergone considerable change since their early application. Preservation of function of the lung is a prime consideration which allows the benefits of this form of treatment to be extended to many to whom it was formerly denied.

"The Differential Diagnosis of Pulmonary Lesions from the Roentgen Standpoint"...

.....Adolph Hartung, Chicago

Pulmonary lesions frequently produce clinical manifestations which cannot be correctly interpreted without the aid of the roentgen examination. The findings obtained with it may be of prime importance in the differential diagnosis by suggesting the nature of the pathological process present. Such variations as may serve this purpose will be discussed in connection with the more commonly observed conditions.

"Intradermic Immunization Against Scarlet Fever".....C. A. Earle, Des Plaines

Intradermic immunization against Scarlet Fever. The Dicks have shown that 115,000 S.T.D. of their toxin given subcutaneously in 5 divided doses will immunize 90% or more of susceptible children against the irothrogens or legal variety of Scarlet Fever. The rather severe local and general reactions attending these injections have deterred their general use. It is rapidly being shown that about 1/10 of the amount prescribed by the Dicks, if given intracutaneously, is equally effective and may be given in 3 doses and are unattended by unpleasant local or general reactions.

In my experience 87% of a group of 115 children were rendered Dick negatives by 3 intradermic injections.

Although Scarlet Fever of late has been mild its morbidity is high (22,000 cases in Illinois in 1935), and some 50% of mild cases are followed by serious sequelae mass immunization is certainly justified.

SECTION ON SURGERY

Sumner L. Koch.....Chairman

Darwin Kirby.....Secretary

Tuesday Afternoon, May 17, 1938

SYMPOSIUM ON INJURIES OF THE ABDOMEN

Members of the Central States Society of Industrial Medicine and Surgery will be guests of the Surgical Section.

"Diagnosis of Lesions of the Spine Producing Abdominal Pain"

.....Edward L. Compere, Chicago

Pain in the abdomen or an acute ileus may be the most marked symptom resulting from lesions of the spine. These lesions may be produced by acute or chronic trauma, acute or chronic infections of the spine, or from benign or malignant neoplasms. An attempt will be made to emphasize the need for ruling out these vertebral lesions in cases of either acute or chronic abdominal pain, before subjecting the patient to laparotomy operations.

Discussion opened by George W. Staben, Springfield.

"Traumatic Lesions of the Male Urethra"...

.....Harry Culver, Chicago

Uncommon urethral lesions as penetrating injuries, constrictions and those produced by instrumentation are not discussed.

Straddle injuries of the anterior urethra and posterior urethral injuries associated with fractured pelvis are discussed in detail. Anatomical considerations and factors concerned in complications are emphasized.

An analysis is made of a series of patients personally managed, with a discussion of the management of each type of lesion, indicating the surgical problems encountered.

Slides, demonstrating the pertinent anatomy, as well as various points in surgical technic will be used.

Discussion opened by Leander W. Riba, Chicago; and Mark Nelson, Canton.

"Subcutaneous Injuries of the Abdomen"....

.....Frederick Christopher, Evanston

With the increasing frequency of automobile accidents, subcutaneous injuries of the abdomen are becoming more common. Some of these cases will always die unless operated upon. In others operation is unnecessary or even harmful. It is of utmost importance to understand thoroughly the evidence which indicates the advisability of operation. Unfortunately this evidence, even in fatal injuries, may be very slight indeed, and the keenest surgical judgment must be exercised. This paper is intended to furnish guidance in the diagnosis of subcutaneous abdominal injuries and advice as to the treatment.

"Injuries of the Right Upper Abdominal Quadrant.....Philip H. Kreuscher, Chicago

Injuries to the abdominal wall are discussed and includes such lesions as hematoma rupture of the muscles and fascia as well as traumatic hernia. Trauma to the liver, without rupture, are taken up with a report of several cases. Symptoms and diagnostic features of this type of injury. Post-traumatic rupture of ulcers of the stomach or intestine are covered. Injuries to the large or small bowel from direct violence are cited. Direct and indirect violence injuring the kidney are mentioned as a probability.

"Spleen Injuries".....Chester C. Guy, Chicago

Frequency of ruptured spleen, penetrating wounds, crushing injuries, injuries to associated viscera, analysis of cases at the Cook County Hospital, mortality, secondary hemorrhage, cases personally observed, review of literature, diagnostic criteria, treatment.

General Discussion.

Wednesday Morning, May 18, 1938

Joint Session with Sections on Medicine and Radiology.

SYMPOSIUM ON INTESTINAL OBSTRUCTION

"Intussusception"...Philip Rosenblum, Chicago

"Some Pharmacological Considerations of Intestinal Obstruction".Carl Dragstedt, Chicago

"The Pathogenesis and Diagnostic Symptoms of Intestinal Obstruction".....

.....John A. Green, Rockford

"Some Physiological Principles Involved in Acute Intestinal Obstruction".....

.....Lester R. Dragstedt, Chicago

"Radiological Aspects of Intestinal Obstruction.....James T. Case, Chicago

"The Surgical Treatment of Intestinal Obstruction".....H. E. Ross, Danville
(For Abstracts of Papers, See Section on Medicine.)

Wednesday Afternoon, May 18, 1938

Joint Session with Section on Radiology

SYMPOSIUM ON THE TREATMENT OF MALIGNANT DISEASE

"The Management of Carcinoma Patients by the General Practitioner".....

.....C. O. Heimdal, Aurora

It is important that the physician realize the insidiousness of malignant disease. It is known, but too often not considered by the physician, that a person may be afflicted without the presence of subjective or objective symptoms. Too frequently a malignancy is overlooked because the physician does not thoroughly investigate his patients. It would be ideal if we could routinely investigate all our cases with the aid of the x-ray. We can, however, do a thorough history and physical examination.

Public education is necessary in order that patients report their symptoms to their physicians early. In early and questionable cases of malignancy consultations, biopsies and x-rays are indicated. When the diagnosis of malignancy has been confirmed close cooperation with the surgeon is necessary. The patient should be referred to a place where facilities are present for his care. If the case is radiological the same is true. The general practitioner examines the patient at regular intervals and is ever on the alert for the presence of metastasis.

"Cancer and Precancerous Conditions of the Skin".....Edward A. Oliver, Chicago

The early recognition of precancerous and cancerous conditions of the skin and their immediate treatment is a matter of the most vital importance. During 1934 five thousand persons died of cancer of the mouth and three thousand three hundred and fifteen died of cancer of the skin. During a period of thirteen years, deaths from cancer of the buccal cavity and skin showed an increase of three thousand two hundred and eighty-one.

In cases of advanced cancer of the skin, the results obtained with treatment depend on the grade of malignancy, the parts involved, and the character of the treatment. In the early stages, before the lesion has become invasive or metastasis has occurred, a cure can generally be effected.

"The Treatment of Intracranial Gliomas"...

.....Harold C. Voris, Chicago

There are marked and important differences in the clinical behavior of the major groups of gliomas; consequently the proper pathologic classification of a glioma will aid considerably in giving a prognosis and determining suitable treatment; conversely careful clinical study of the patient will often lead to a correct pre-operative diagnosis.

The surgical procedures that may be carried out on gliomas depend on their location and degree of malignancy. The more benign types should be resected as far as possible; the more malignant, unless of relatively small extent had best be treated with decompression

and later roentgen therapy. Certain types respond especially well to the latter.

"Pneumonectomy for Bronchogenic Carcinoma of the Lung".....W. E. Adams, Chicago

Bronchogenic carcinoma of the lung has created considerable interest during the past five years. Since the first successful total pneumonectomy for this condition was performed by Dr. Ewatts Graham in the spring of 1933 an increasing number of similar results have been reported. The importance of early diagnosis cannot be overemphasized and the procedure which offers most promise in this respect is the early use of the bronchoscope in patients with persistent cough of unknown etiology.

Case report: White male 42. Symptoms of cough, fever and sweats of two months duration. Bronchoscopy with biopsy revealed a carcinoma on the right side. Total Pneumonectomy (right) performed through the third left interspace on 1-29-'37. Uneventful convalescence. Discharged seven weeks after operation. At work full-time two and one-half months later. No complaints.

"Early Pathological Lesions of the Cervix and Endometrium". Benjamin H. Orndoff, Chicago

The importance of careful periodical investigations of conditions involving the cervix, the canal, and the corpus uteri, as well as the oviducts, cannot be overemphasized. Findings elicited through palpation, inspection, probe diagnosis, etc., are sadly inadequate in many important cases. The dangers attending the use of the surgical curette and some other surgical procedures for diagnostic purposes should be recognized. X-rays and contrast materials have become indispensable in the investigation of the pelvic genital organs. Under the direction of x-rays, certain electrosurgical procedures may be safely conducted within the uterus. A biopsitome has been devised by which specimens for microscopy may be secured without introducing the serious objections to the use of the curette. Neoplastic regressions following adequate irradiation can be determined more definitely and the early recognition of pathology is more certain when x-rays and contrast material are used more routinely. With improved diagnostic facilities, there follows more reliable prognosis.

"Treatment of Malignancies of the Colon and Rectum".....Lorin D. Whittaker, Peoria

Marked advances have been made in the treatment of malignancies of the colon in the past ten years. Malignancies of the colon and rectum are attacked by irradiation, fulguration, or surgery. Indications and limitations of each will be discussed with emphasis on surgery. The operative procedure used varies with the location of the lesion. Multiple stage operations are favored over one stage operations. Local immunity in relation to multiple stage operations; the place of pre-operative vaccination; the importance of pre-operative preparation and post-operative care; and technical procedures which tend to reduce complications and increase the limits of operability will be discussed.

Discussion opened by Guy V. Pontius, Chicago.

Thursday Morning, May 19, 1938

Joint Session with Sections on Medicine; Eye, Ear, Nose and Throat; Public Health and Hygiene; and Radiology.

(For Program and Complete Abstracts of Papers, See Section on Medicine.)

SECTION ON EYE, EAR, NOSE AND THROAT

C. B. Voigt.....*Chairman*
Samuel J. Meyer.....*Secretary*

Tuesday Morning, May 17, 1938

9:00-12:00—"Cervical Fascia and Infections About the Neck"....R. W. Kerwin, Chicago

Fascial planes and spaces:

1. Prevertebral fascia
Retropharyngeal space
2. Pretracheal fascia
Cervical mediastinotomy
3. Investing fascia
Parotid and submaxillary spaces
4. Carolid sheath
Parapharyngeal space

Anterior sternocleidomastoid approach. Submaxillary approach after Mosher.

"The Consideration of Some Practical Points in the Management of Inflammatory Diseases of the Uveal Tract".....
.....G. LeRoy Porter, Urbana

This paper will not contain case reports nor statistical data of results obtained, but will cover the important points of diagnostic procedure necessary to establish the causative factors; also, the relation of the oculist to the consultants who are essential in the management of these cases. A discussion of both local and general therapy will be included.

"Acute Laryngitis in Infants".....
.....Glenn J. Greenwood, Chicago

The etiology, symptoms and diagnosis of cases seen at Children's Memorial Hospital will be briefly reviewed and the anatomy and treatment will be taken up in considerable detail.

"Exophthalmos"
.....A. D. Ruedemann, Cleveland, Ohio

A diagnosis of exophthalmos is easily made by measuring the position of the eye, but the differential diagnosis so far as the cause is concerned is sometimes very difficult. This must be done by exclusion, the following considerations being of value:

1. Is the exophthalmos bilateral or unilateral?
2. What is the age of the patient?
3. Is there an increase in the orbital contents or a decrease in the size of the orbit? Roentgen ex-

amination is of great assistance here in ruling out or determining changes in the bone.

4. If bilateral, the physical examination, examination of the blood, and determination of the pulse rate, etc., may help to indicate the cause.
5. If unilateral, palpation and determination of any inflammation are important.
6. The history is usually of little value and pertinent information must be pieced together to be of any value. Especial emphasis should be directed toward the time of onset.

Early diagnosis and treatment are most essential if the best functional results are to be obtained.

Tuesday Afternoon, May 17, 1938

2:30-5:30—Instruction Courses.

"Tuberculosis of the Eye".....

.....Beulah Cushman, Chicago

"Functional Examination of the Ear".....

.....Paul A. Campbell, Chicago

"Plastic Surgery About the Eyelid".....

.....Philip O'Connor, Chicago

(Subject to be announced.)

(Speaker to be announced.)

Wednesday Morning, May 18, 1938

9:00-11:00—"Nasal Septum Surgery in Children".....M. H. Cottle, Chicago

The anatomy of the nasal septum is reviewed from an embryological viewpoint.

Children frequently suffer from the effects of nasal obstruction due to abnormalities and injuries of the nasal septum. The usual adult operations are not indicated because the nose is still developing—its growth depending in great measure on the development of the septum.

A review of the literature and two surgical suggestions are offered to promote an interest in the management of these cases.

"Etiologic and Therapeutic Factors Involved in Chronic Blepharoconjunctivitis".....

.....Nathan K. Lazar, Chicago

A report of over fifty cases of Blepharoconjunctivitis to determine if possible, the role played by fungus. Various therapeutic measures were used and results noted. No definite conclusions are given.

"Cleft Palate and Lip".....

.....L. W. Schultz, Chicago

The author's change from the usual procedure in dealing both with cleft palates and lips merits publication. His method of freeing the principal blood supply to the palate enabling him to elongate it, also his modification of dealing with the anterior portion of wide complete palatal clefts will be discussed.

In both cleft palate and lip he will discuss his time of operation and why, and will demonstrate his change in the operation on double cleft lips from the routine

method. The paper will be illustrated with lantern slides.

"Chronic Sinus Disease and the External Ethmo-Fronto Sphenoid Operation".....

.....Irving Muskat, Chicago

There is a great misconception as to the status of chronic nasal sinus disease. Chronic suppuration can be eradicated with success. This is particularly true of the antrum. Intranasal operations are not always adequate or successful when dealing with chronic ethmoid disease, but the external ethmo-sphenoid operation affords the only real solution to this problem. The value of the external operation is underestimated because of lack of knowledge of the procedure and the difficulty to execute a masterful technique which is essential for success. The evaluation of etiological factors, particularly allergy, are important but skin testing and injections cannot displace surgery in chronic suppurative sinus disease.

"Hemorrhage from the Larynx".....

.....Arthur H. Geiger, Chicago

Report of two cases of hemorrhage from the vocal cords. In these cases there was no pathological condition that could be demonstrated outside the local site of hemorrhage. The differential diagnosis is important. Ulcers, tumors and systemic causes must be considered. The treatment is mainly symptomatic and direct medication to the cords only if local conditions call for it. Prevention of recurrence by proper vocal training is important.

Wednesday Afternoon, May 18, 1938

2:30-5:00—"End Results in the Treatment of Chronic Suppurative Otitis Media".....

.....George E. Shambaugh, Jr., Chicago

One hundred consecutive cases of chronic suppurative otitis media encountered in practice are analyzed with reference to etiology, type of pathology and treatment with especial reference to the indications for surgery and to the end-results of conservative and surgical management. Particular attention is paid to the hearing before and after treatment as well as to the present status of the ears with reference to discharge.

A brief description of the Bondy type of modified radical mastoidectomy for the preservation of hearing as used in certain of these cases is given with a brief motion picture illustrating the Bondy operation with primary skin graft.

"A New Treatment for Progressive Myopia"

.....W. Moore Thompson, Chicago

The paper will include history and etiology, the treatment to consist of the use of prisms and muscle treatments including stereopticon.

The treatment is based upon a theory that the chief etiological factors are continuous pressure of the rectus muscle upon the coverings of the eye, which being increased by the constant tendency to divergence during the effort of the eyes at binocular fixation produces

a gradual but definite lengthening of the anterior posterior pole of the eye.

There will be a demonstration of one or more cases if time permits.

"The Value of Roentgenograms in Certain Diseases of the Neck".....

.....Charles D. Sneller, Peoria

The use of the x-ray in the interpretation of neck pathology has long been recognized and yet it is still not sufficiently appreciated by the Otolaryngologist. The average Roentgenologist is not sufficiently trained in the anatomy and pathology of the neck to aid the Otolaryngologist in much more than general detail. Therefore, it behooves the latter to add his more detailed knowledge to that of the Roentgenologist. Various diseases will be pointed out but particular mention will be made of the edema and abscess in inflammations, the determination of their extent and better treatment.

"Pediatric Treatment of Otolologic Sepsis, Including Meningitis".....

.....Philip L. Aries, Chicago

The co-operative management of otogenic sepsis in children by the otologist and pediatrician offers the patient the best chance for recovery. The surgeon must eradicate foci of infection and institute drainage with the least manipulation possible. The pediatrician's objective is to maintain the integrity of the body tissues and institute measures to combat toxemia and bacteremia. The administration of fluids, nourishment, blood transfusions, serum and drug therapy are considered.

When there is a complicatory meningitis, spinal fluid drainage, cremotherapy and sera in addition to the general treatment are therapeutic aids.

"Management of Cross Eyes".....

.....W. A. Fisher, Chicago

Thursday Morning, May 19, 1938

Joint Session with Sections on Medicine; Surgery; Public Health and Hygiene, and Radiology

(For program and complete abstracts of papers, see Section on Medicine.)

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SECTION ON PUBLIC HEALTH AND HYGIENE

Winston Tucker.....Chairman

F. S. Needham.....Secretary

Tuesday Afternoon, May 17, 1938

2:30—"Mosquito Control in Illinois as a Public Health Measure".....

.....Spencer S. Fuller,

.....Health Commissioner, Riverside

Tax supported activities are now going on in twenty-five states. Illinois joined the ranks in 1927. Outline of how districts may be formed in Illinois. Seven known diseases of man, domestic animals and birds transmit-

ted by mosquitoes. Man-made mosquito breeding places and natural breeding places. Role played by yellow fever and malaria in Illinois discussed. Effect on property valuation and general sanitary conditions of mosquito control. How mosquito control and wildlife conservation may go hand in hand. Methods used in controlling mosquitoes. Number of varieties in Illinois and those most prevalent with some of the characteristics effecting their control.

Discussion opened by Robert L. Reynolds, Maywood.

3:00—"Hemolytic Streptococcus Cultures and the Dick Test in Relation to Scarlet Fever"

.....John A. Bigler, Highland Park

3:30—"The Value of One Injection of Alum Precipitated Toxoid in Controlling Diphtheria".....

C. H. Benning, Peoria

In February, 1937, 1691 children in the grade schools of Peoria, Illinois were given one injection of alum precipitated toxoid as a preventive measure against diphtheria. In February, 1938, it was decided that the immunity developed should be checked.

Five schools in which 596 children had received the one injection of toxoid were chosen for schicking. Four hundred twenty eight children took the schick test and returned for the reading. Three hundred seven were negative, and 121 were positive. Six took the test but did not return for the reading. Of the 428 who took the test and returned for the reading 71.73% were negative and 28.27% were positive. The ages of the children tested ranged from 2 years to 15 years. So far as can be ascertained from health department records none of the children inoculated with the one injection of alum precipitated toxoid have developed diphtheria.

Discussion opened by C. A. Earle, Des Plaines.

4:00—"Milk Sickness".....

.....G. Howard Gowen, Champaign

In the period 1936 and 1937, four known outbreaks of milk sickness occurred in Illinois, with 21 cases and 2 deaths. The counties involved were Shelby, Effingham, Wabash and Perry. All cases exhibited the symptoms of weakness, nausea and vomiting, obstinate constipation, and trembling on exertion. All of the families had their own cows, and the symptoms were in proportion to the intake of butter, cream and milk. In every instance "trembles" had been diagnosed in the livestock. There had been a loss of one or more animals from the disease. In every instance white snake root was found in abundance in the pastures which were wooded and shady.

Discussion opened by J. S. Templeton, Pinckneyville.

4:30—"An Attempt at the Laboratory Control of Scarlet Fever by Hemolytic Streptococcus Cultures".....

Martin H. Seifert
.....Commissioner of Health, Wilmette

This paper is a summary of about six years work with hemolytic streptococcus cultures in a village of 16,000 people, where an attempt has been made to determine whether or not the isolation of scarlet fever patients, or contacts of scarlet fever patients until cultures no longer show hemolytic streptococci, will reduce the incidence of scarlet fever. In many instances also, school children with positive throats and who are in contact with positive cases have been isolated.

Believing the work is of sufficient scope to warrant further study, this is presented with the hope of interesting health officers in other communities.

Discussion opened by W. W. Bauer, Chicago.

Wednesday Afternoon, May 18, 1938

2:30—"Venereal Disease: Some Reflections"

.....J. Howard Beard, Urbana

Intensive education, modern diagnostic methods, and the ability of the most gifted epidemiologists and therapists will be used to destroy the gonococcus and the spirochaeta pallida. These organisms will meet this knowledge and ingenuity with their versatility, protean manifestations, and ability to develop resistant strains. They will profit by the fallibility of tests, the tendency of individuals to weary of prolonged treatment and to avoid the inconvenience of the drugs used. The frequent inability of men to control their urges with their reason will give both bacteria a million reprieves. History will record not an engagement for a day, but a battle for a century.

Discussion opened by Arlington Ailes, La Salle.

3:00—"The Evanston Social Hygiene Clinic"

.....William H.

Tucker, Commissioner of Health, Evanston

The Evanston Department of Health maintains a social hygiene clinic which is supported jointly by the City of Evanston and the State Department of Public Health. Residents of Evanston with a venereal disease may obtain examination and treatment without cost. The clinic was begun on July 1, 1937, and during the first six months of operation, 300 persons presented themselves for care. Of this number, 205 were found to be infected with a venereal disease.

An outline of the set-up of a municipal social hygiene clinic in a small city will be presented, with methods of follow-up of contacts and those who discontinue treatment prematurely. Emphasis will be placed upon the importance of a complete medical examination of every patient before treatment is begun, in order that each case may be handled in the proper way.

Discussion opened by N. O. Gunderson, Rockford.

3:30—"Serological Control of Neisserian Infections by Means of a Bouillon Filtrate (Corbus-Ferry)—Progress Report".....

.....Budd C. Corbus, Chicago

At the present time standardization of the treatment of gonococcal infections does not exist. With the defensive mechanism of immunity in man established, a toxin discovered and a safe method of injecting it accepted, it is now possible to standardize treatment.

A patient with a positive gonorrhea compliment fixation test is in a state of hypersensitivity to the gonococcus. He is desensitized to the gonococcus by giving the toxin intradermally. A gonorrhea patient with a negative compliment fixation test is injected until he is in a state of hypersensitivity and is continued on the same management until hyposensitization is complete (Negative compliment fixation).

No local treatment or medication of any kind is given, except sedatives when indicated. The use of haliver oil with viosterol is substituted for the old time balsam medication. Case reports will be presented.

Discussion opened by Harold F. Diller, Peoria.

4:00—"The Syphilis Control Program of the State Health Department".....

.....Noxon Toomey, Springfield

The Division of Communicable Diseases supplies free drugs and follow up field service to physicians for infective and non-infective cases of venereal disease, regardless of patient's finances. Method described systematically for procuring necessary drugs free. Reason stated for necessary standard requirements and procedures; also, the exceptions available for unusual and problem cases.

Stresses need for more attention to syphilis in obstetric and pediatric practice. Every pregnant woman should have a blood test for syphilis. Prophylaxis by treatment of infected mother. Start treatment early and continue to delivery, alternating arsenicals and heavy metals monthly, but always overlapping. Same principles for baby after birth. Dosages and techniques for infants and children will be presented.

Discussion opened by H. J. Burstein, Decatur.

4:30—"The Control of Venereal Diseases"

.....G. D. Taylor, Chicago

The primary function of public health officials is the control and eradication of communicable diseases.

Research, study, investigation and experimentation have produced measures which have been successful in the satisfactory control of other diseases—but these had not been applied to venereal diseases except sporadically, because until recently no public health official has had the temerity to compel the attention of the great American public to an educational and publicity campaign concerning the importance of these diseases as a public health problem.

Such interest and concern has now been aroused that the people are demanding that action be taken. The successful control of venereal diseases must include all measures which have been employed successfully against other diseases. These include educational, epidemiological and adequate therapeutic measures.

The cooperation of the medical profession is of greatest importance in venereal disease control, and any

campaign must include the welfare and cooperation of the private physician.

Discussion opened by John J. McShane, Springfield.

Thursday Morning, May 19, 1938

Joint Session with Sections on Medicine; Surgery; Ear, Eye, Nose and Throat; and Radiology

(For program and complete abstracts of papers see Section on Medicine.)

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SECTION ON RADIOLOGY

Ralph G. Willy.....Chairman
Harry B. Magee.....Secretary

Tuesday Afternoon, May 17, 1938

2:30—Chairman's Address: "Radiologic Aids in the Diagnosis of Heart Disease in Children".....Edmund G. Lawler, Chicago

Anatomical borders of the heart in the posterior— anterior, right anterior oblique, and left anterior oblique positions.

The heart as studied with the fluoroscope, teleroentgenogram, orthodiagram and the roentgenokymogram.

The measured diameters of the heart and chest the norm of cardiac enlargement.

Auricular ventricular lesions. Pericardial changes in disease. Congenital heart disease with position defects and changes in the pulmonary conus.

Discussion opened by—

"Gynecologic Radium Therapy".....

.....Harold Swanberg, Quincy

The uses of radium in modern gynecologic practice will be enumerated. Emphasis will be placed on the two principle uses of radium—in the treatment of benign uterine hemorrhage and uterine cancer. The advantages of radium over x-rays in certain forms of uterine bleeding and the importance of combined radium and x-ray therapy in uterine carcinoma will be emphasized; the excellent results in cervical malignancy secured at the University of Paris will be related together with the author's technic of radium application.

Discussion opened by Henry Schmitz, Chicago.

"X-Ray Therapy of the Uterus and Adnexa"

.....Edmund P. Halley, Decatur

A Film Clinic and Round Table Discussion of Interesting and Unusual Cases.

Wednesday Morning, May 18, 1938

Joint Session with Sections on Medicine and Surgery

SYMPOSIUM ON INTESTINAL OBSTRUCTION

"Intussusception".....Philip Rosenblum, Chicago

"Some Pharmacological Considerations of

Intestinal Obstruction".....

.....Carl Dragstedt, Chicago
"The Pathogenesis and Diagnostic Symptoms of Intestinal Obstruction".....

.....John A. Green, Rockford
"Some Physiological Principles Involved in Acute Intestinal Obstruction".....

.....Lester R. Dragstedt, Chicago
"Radiological Aspects of Intestinal Obstruction".....James T. Case, Chicago

"The Surgical Treatment of Intestinal Obstruction".....H. E. Ross, Danville
(For abstracts of papers, see Section on Medicine.)

Wednesday Afternoon, May 18, 1938

Joint Session with Section on Surgery

SYMPOSIUM ON THE TREATMENT OF MALIGNANT DISEASE

"The Management of Carcinoma Patients by the General Practitioner".....

.....C. O. Heimdal, Aurora

"Cancer and Precancerous Conditions of the Skin".....Edward A. Oliver, Chicago

"The Treatment of Intracranial Gliomas"...

.....Harold C. Voris, Chicago

"Pneumectomy for Bronchogenic Carcinoma of the Lung"....W. E. Adams, Chicago

"Early Pathological Lesions of the Cervix and Endometrium"

.....Benjamin H. Orndoff, Chicago

"Treatment of Malignancies of the Colon and Rectum".....Lorin D. Whittaker, Peoria

Thursday Morning, May 19, 1938

Joint Session with Sections on Medicine; Surgery; Eye, Ear, Nose and Throat; and Public Health and Hygiene

(For program and complete abstracts of papers, see Section on Medicine.)

RULES GOVERNING PRESENTATION OF PAPERS

"All papers read by members shall be limited to twenty minutes and remarks in discussion to five minutes, floor privilege being allowed only once for the discussion of any one subject.

"All papers read before the Society or any of its Sections shall become the property of the Society. Each paper shall be deposited with the Secretary of the Section when read and the presentation of a paper to the Illinois State Medical Society shall be considered tantamount to the assurance on the part of the writer that such paper has not already appeared and will not appear in medical print before it has been published in the Illinois Medical Journal.

"A paper not heard in its scheduled turn shall be

held subject to the call of the Chairman of the Section at the end of the regular session if time permits, or as an alternative at the end of the program.

"All subjects shall be confined strictly to the subject in hand.

"No paper shall appear in the printed transactions of the meeting unless read in full or in abstract."

(From the By-Laws of Illinois State Medical Society.)

SCIENTIFIC EXHIBITS

Knights of Columbus Building

J. S. Templeton, *Chairman*. Pinckneyville

N. S. Davis, III, *Secretary*. Chicago

"Newer Trends in Orthopedic Surgery with Special Reference to Teaching." Philip Lewin, Northwestern University Medical School and Cook County Hospital.

The exhibit consists of translites, 8x10 x-rays, anatomical models.

"Physics Made Easy" (Medical Physics for the Busy Physician), American Medical Association, Council on Physical Therapy. Thomas G. Hull.

With the help of lantern slides, homemade, and simplified apparatus, demonstrations will be given at stated intervals on physics as applied to diathermy, electrotherapy, and ultraviolet radiation. Demonstrational lectures will require from twenty minutes to one-half hour and an effort will be made to describe simply, certain facts and principles in physics that bear directly on apparatus used in the practice of medicine. These demonstrations might be given in a temporary room in the main demonstration hall arranged conveniently.

"(1) Choroid Plexus Resection in Hydrocephalus."

"(2) Clinical Cystometry." Harold C. Voris and Herbert E. Landes. Loyola University Medical School and Mercy Hospital, Chicago.

Model (life size) of hydrocephalic brain with demonstration of operative approach and two types of technique of operation on the plexus. (2) Enlarged photograph of a newly developed cystometer. Description of technique, indications, and diagnostic value of clinical cystometry. Tracings of typical cystometric studies in various neurologic and urologic lesions.

"Skull Fracture Exhibit." Harry E. Mock and John L. Lindquist. Surgical Department Northwestern University School of Medicine, and St. Luke's Hospital, Chicago.

Exhibit shows need for improved management of skull fractures. Analysis of 3,000 cases collected and 300 of author's own cases. Cases grouped according to signs and symptoms. Cases grouped according to treatment. Analysis of the indications and value of spinal puncture. Analysis of operative cases. Models showing skull and brain pathology. Photographs, graphs, charts, and x-ray films.

"Official Preparations." Mr. O. U. Sisson, Chairman, Interprofessional Relations Committee, National Association of Retail Druggists.

The exhibit displays only samples of preparations from the United States Pharmacopoeia XI and National Formulary VI.

"Experimental Intersexuality in Rats."

"Experimental Production of Homogeneous Osteoporosis in Dogs."

(Rats) R. R. Greene, M. W. Burrill, A. C. Ivy, Northwestern University School of Medicine, Chicago.

(Dogs) R. A. Bussabarger, Smith Freeman, A. C. Ivy, Northwestern University School of Medicine, Chicago.

Photographs, charts, whole mounts and models for intersex exhibit. A chart and mounted bones and two stuffed and mounted dogs for osteoporosis.

"Physical Examinations in Industry." Chicago Rapid Transit Medical Department, Hart E. Fisher, Lewis H. Ruttenberg, J. Lewis Bailen, Chicago.

Twenty-five years experience in Industrial Medicine and Surgery. 1. Charts, graphs, photographs and apparatus. 2. Research in "Electric Shock, Burns, and Glare Injury to Eyes," wax models of burns, charts, photographs, posters, apparatus working manikins. 3. "Evolution of Resuscitation" Methods of Artificial Respiration from early ages to present time. Shown by apparatus, respirators, charts, photographs, drawings. 4. "Night Hazards of Motor Vehicle Driving" Apparatus, photographs. Illuminated charts. 5. "Detection of Accident Process in Industry" photographs, apparatus, drawings. 6. "Heart Study and Hypertension Research" by use of charts, photographs, apparatus and drawings. Motion picture presentation of each of the above subjects in exhibit.

"Improvised Home Apparatus for After-Care of Poliomyelitis." American Physiotherapy Association, Chicago Chapter. Jessie L. Stevenson, Visiting Nurse Association of Chicago.

Miniature model of home set-up for physical therapy treatment, including such equipment as a tank for underwater exercises and apparatus for lifting the patient in and out of the water, improvised portable cart and other appliances. Exhibit of photographs and models of homemade apparatus for the care of patients; simple splints for maintaining correct posture and demonstration of making of these splints.

"Catgut Absorption" (Experimental and Clinical Study), Hilger Perry Jenkins, University of Chicago, Department of Surgery.

An experimental and clinical study of the decline in tensile strength and ultimate absorption of plain and chronic catgut is presented: by a series of transparent tissue specimens showing the status of the catgut at varying periods of time after implantation; by specimens of catgut removed from the tissues at varying periods of time which are mounted on cards with full description of the loss of strength which was observed for each size used; and by photomicrographs showing the reaction in the tissues to the catgut.

"Diagnosis and Treatment of Pneumonia." Wayne W. Fox, Paul S. Rhoads, Northwestern University Medical School, Chicago, Illinois.

Charts showing distribution of types, technique of typing, dosage of serum, technique of serum administration, technique of oxygen administration. Demonstrations of both Neufeld and Sabin typing under the microscope, charts showing results to be expected from serum treatment.

"A Classification of Non Paralytic Strabismus" (Results Secured with Reference to Treatment.) George E. Park, G. P. Guibor, Northwestern University and Children's Memorial Hospital, Chicago.

A classification has been made of over 700 cases of concomitant strabismus, from the Orthoptic Clinics at Children's Memorial Hospital and Northwestern University. The essential purpose for preparing this data was to differentiate those types of strabismus amenable to nonsurgical training and treatment from those amenable to surgery. Photographs and charts are to be used to show the characteristics of each type of squint, and the average number of cases recovering cosmetically from the appropriate treatment.

"Trends in Public Health." Illinois Department of Public Health, Henry Horner, Governor, A. C. Baxter, M. D., Acting Director.

Graphical statistical charts on diabetes, ophthalmia neonatorum, pneumonia, tuberculosis and life expectancy.

"Metrazol and Insulin Treatments for Dementia Praecox." Illinois Department of Public Welfare. Henry Horner, Governor, Blanche Fritz, Department representative.

Exhibit will consist of moving pictures in combination with lecture given to describe the treatment.

"Fractures of the Lower Extremities." James A. Jackson, the Jackson Clinic, Madison, Wisconsin.

Exhibit consists of (a) Transparencies demonstrating various types of injuries to the lower extremities, including special instruments and appliances used in their management. (b) Transparencies showing various cases handled under the above management. (c) Models and diagrams illustrating aspects of this subject.

"What is Normal Blood Pressure?" Samuel C. Robinson, Marshall Bruer, Chicago.

Charts, graphs, tables, three dimensional relief "maps" etc.

"Production of Genital Growth in the Male." W. O. Thompson and N. J. Heckel, Rush Medical College, Presbyterian Hospital, Chicago.

It will be demonstrated that the anterior pituitary-like principle from the urine of pregnant women exerts a powerful stimulus to the growth of the genitalia of the human male. A series of large photographs will show marked genital growth from its use before and after the age of puberty, notably in patients with hypogenitalism and undescended testes. Stages in the production of premature puberty following its administration will also be illustrated. Its use in the treatment of hypogenitalism and undescended testes will be outlined briefly. The importance of avoiding marked genital growth in young boys will be stressed.

"Puerperal Sepsis." Department of Public Health, State of Illinois. F. H. Falls, Maternal and Infant Hygiene, University of Illinois College of Medicine, Department of Obstetrics and Gynecology, Chicago.

Pathology—nine drawings and one graphic temperature chart. Drawings illustrating the various phases of the pathology of Puerperal Sepsis and its complications. History of Puerperal Sepsis—four charts containing portraits of Hippocrates, White, Holmes, Semmelweis,

with descriptive paragraph listing their contributions to the subject. Treatment of Puerperal Sepsis—four drawings in water color 22"x24" showing (1) Fowler's position, (2) Blood transfusion, (3) Serum injections, (4) Phlegmasia alba dolens by leg elevation. There is also a graphic chart of Sepsis Mortality in Illinois.

"Mold Allergy." (Diagnosis in Allergy), Samuel M. Feinberg, Theodore B. Bernstein, S. S. Rubin, Northwestern University College of Medicine, Chicago.

The importance of inhaled fungus spores as causes of hay fever and asthma is stressed. Charts, maps, microphotographs and drawings illustrate the prevalence, geographic and seasonal distribution and morphology of the fungi. Other charts show the clinical importance, frequency and methods of diagnosis of mold allergy. An added feature of the exhibit consists of charts and illustrations showing the diagnostic procedures in allergy as a whole.

"Dermatophytes and Dermatomycosis." Tibor Benedek, Mycological Laboratory, Northwestern University College of Medicine, Chicago.

Dermatophytes will be presented in uniform flasks—culture as giant cultures. They will be shown as tube cultures in order to demonstrate the possibility of microscopical examination of the vegetation without destroying it. Further cultures in hanging drops will be prepared to show the minute microscopical structures of the different dermatophytes—clinical pictures of dermatomycosis will be shown in photographs.

"Weak Foot—Pathogenesis and Treatment." James Graham, Springfield.

With drawings, models, x-ray plates and explanatory cards. The pathogenesis of each of the three main types of the weak foot is illustrated (postural type: shortened Achilles type: and the anatomical type). The treatment of these is illustrated by the same method. In the postural type, the role of corrective exercises is emphasized and explained. Each of the shoe corrections employed (including arch support) can be made in the physicians' offices (illustrated with models) or by a shoe maker under the direction of the physician. There are no factory made appliances.

"A New Oxygen Tent." David J. Cohn, Michael Reese Hospital, Chicago.

An exhibit consisting of several models of a new oxygen tent using dry ice (carbon dioxide) as refrigerant. The use of this refrigerant makes possible a very compact, inexpensive, and efficient cooling unit of novel design. Circulation of the atmosphere within the tent is obtained without the use of a blower, and much more satisfactorily than in tents of conventional design.

HALL OF HEALTH

HEALTH EXHIBITS FOR THE PUBLIC

May 16-21, inclusive
Elks Club Building

J. S. Templeton, *Chairman* Pineknayville
N. S. Davis, III, *Secretary* Chicago

"Nursing in Illinois." Illinois State Nurses' Association, Mrs. Estelle Weltman Blatt, Secretary, Chicago.

Graphic charts illustrating nursing in Illinois. Also

exhibit material from American Nurses' Association and exhibit material from National League of Nursing Education.

"School Tuberculosis Survey," City of Chicago. Municipal Tuberculosis Sanitarium. Frederick Tice, M. D., President; Harry J. Reynolds, Vice-President; Allan J. Hrubby, M. D., Secretary; and Leo M. Czaza, General Superintendent, Chicago.

Illustrating by photographs and statistical charts the method of procedure and results of survey of school children of Chicago for tuberculosis, using the Mantoux Test, followed by X-Ray of those who prove positive.

"Recovery." State Department of Public Welfare, Springfield.

Moving picture showing the progress made by patients at State institutions who are receiving metrazol and insulin treatment for dementia praecox—beginning with the first treatment and showing the progress until recovery.

"Trachoma Clinics." State Department of Public Welfare, Springfield.

Charts and slides.

"Work of the Chicago Heart Association." Chicago Heart Association. Ruth Pearce McEldowney, Chicago.

Bulletins and pamphlets. Articles made by shut-in cardiac children under supervision of occupational therapist. One large poster of three sections 20x30 each, showing value of health education organization to a community. Also nine posters 20x30 each; titles as follows: Purpose of the Chicago Heart Association (3 posters) a. Education, b. Coordination, c. Research: Organization of the Chicago Heart Association: Functional Classification of Patients with heart disease: Service to Individuals: What about Volunteers?: Five Leading Causes of Deaths in Chicago, 1936: Bulletins for Free Distribution.

"Public Health Service and Preventive Medicine." State Department of Public Health, A. C. Baxter, Acting Director, Springfield.

Portrays various functions of State and local health departments and gives essential information concerning the prevalence, seriousness and methods of controlling pneumonia, syphilis, diphtheria, typhoid fever and several other diseases.

"Essentials of Prenatal Care." Illinois State Department of Public Health, Maternal and Infant Hygiene and U. of I. College of Medicine. Dept. of Obstetrics & Gynecology. F. H. Falls, Chicago.

(Essentials of Prenatal Care)

History taking—physical examination—pelvic measurements—other essentials of a complete prenatal care program.

(Physiology of Pregnancy)

The progress of pregnancy from fertilization to full term.

(The Postnatal Period)

Essentials of satisfactory care during the postnatal period, with series of charts and drawings.

Note: A complete list of Hall of Health Exhibits and other information pertaining to them will be published in the May ILLINOIS MEDICAL JOURNAL.

EXHIBITORS AT THE 1938 ANNUAL MEETING

Allergia Products Company, Newton, Massachusetts.
A. S. Aloe Company, St. Louis, Missouri.
Arlington Chemical Company, Yonkers, New York.
Belgard, Inc., Chicago, Illinois.
DeVilbiss Company, Toledo, Ohio.
C. B. Fleet Co., Inc., Lynchburg, Virginia.
General Electric X-Ray Corporation, Chicago, Ill.
Gerber Products Company, Fremont, Michigan.
Hamilton-Schmidt Surgical Co., St. Louis, Missouri.
H. J. Heinz Company, Pittsburgh, Pennsylvania.
Horlick's Malted Milk Corporation, Racine, Wis.
Jones Metabolism Equipment Co., Chicago, Illinois.
Lea & Febiger, Philadelphia, Pennsylvania.
Lederle Laboratories, Inc., New York City.
J. B. Lippincott Company, Philadelphia, Pennsylvania.
M. & R. Dietetic Laboratories, Inc., Columbus, Ohio.
Mead Johnson and Company, Evansville, Indiana.
Medical Protective Company, Wheaton, Illinois.
Mellins Food Company, Boston, Massachusetts.
The C. V. Mosby Company, St. Louis, Missouri.
V. Mueller & Company, Chicago, Illinois.
Philip Morris & Co., Ltd., Inc., New York City.
Petrolagar Laboratories, Inc., Chicago, Illinois.
W. B. Saunders Company, Philadelphia, Pennsylvania.
Standard X-Ray Company, Chicago, Illinois.
Sutliff & Case Co., Inc., Peoria, Illinois.
John Wyeth & Brother, Inc., Philadelphia, Pa.

Note: This list is not complete but the official list of exhibitors will appear in the May ILLINOIS MEDICAL JOURNAL.

NOTES ON EXHIBITS

The Mellin's Food Company in Booth Number 13. Fitting the food to the baby, the correct approach to bottle feeding, is the underlying principle of the easily workable method that employs Mellin's Food as the milk modifier. A discussion of this matter with physicians is sincerely desired and your visit to the Mellin's Food Company's exhibit will be greatly appreciated.

New books on display at the Lippincott booth, Number 5 include:

Thorek—MODERN SURGICAL TECHNIC—2 volumes with more than 2,000 illustrations.

Bacon—ANUS, RECTUM, AND SIGMOID COLON—with 487 Illustrations.

Rigler—ROENTGEN DIAGNOSIS.

Wilson—FRACTURES.

McBride—DISABILITY EVALUATION.

And other new books.

The Medical Protective Company in Booth Number 4. The John Wyeth & Brother, Inc., in Booths Number 8 and 9.

Gerber's, in Booth Number 10, invites you to inspect their strained foods which will be on display. Two kinds of literature, some for professional use and some for distribution to mothers or adult patients on therapeutic diets, are both available for your examination, and will be sent to you on request.

V. Mueller & Company in booth Number 53.

A. S. Aloe Company in booth Number 1.
Standard X-Ray in booth Number 12.

The H. J. Heinz Company will greet you in booth Number 30. In order that you may see the natural fresh color and uniform consistency of Heinz Strained Foods our display presents in an attractive manner all twelve varieties. Naturally, you have some questions as to their preparation and uses. We therefore invite you to let our representative serve you in this respect.

We will be glad to send you a copy of the fifth edition of our Nutritional Chart upon registration at our exhibit.

Physicians are cordially invited to visit the new convention display in Booth Number 12 where Petrolagar Laboratories, Inc., will be represented by Messrs. Frisbie and Lombardo.

Petrolagar is an emulsion of pure mineral oil (65% by volume) and agar-agar, accepted by the Council on Pharmacy and Chemistry of the American Medical Association for the specialized treatment of constipation. Scientific drawings and literature on the subject of constipation will be available in addition to samples of the five types of Petrolagar.

Mead Johnson & Company at Booth Number 14 are distributing this year an unusually fine souvenir item. It is not only beautiful but extraordinary because it contains no advertising. Ask for your copy of "Parergon."

The complete display of Mead Products includes two new ones.

W. B. Saunders Company will exhibit at Booth Number 11 a complete line of its books on Medicine, Surgery, and Allied Subjects. Among the many outstanding works will be Warbasse-Smyth's "Surgical Treatment," the new Beckman's "Treatment," the new Cecil's "Medicine," Bickman's seven volume "Operative Surgery," Buie's "Practical Proctology," Tuft's "Clinical Allergy," Gifford's new "Ophthalmology," Padgett's new "Surgical Diseases of the Mouth and Jaws," Wiprud's "Business Side of Medical Practice," Herman's new "Urology," new edition of Andrews' "Skin Diseases," new (1938) Mayo Clinic Volume, Merritt & Fremont-Smith's "Cerebrospinal Fluid," Bastedo's "Materia Medica and Therapeutics," Mason's "Preoperative and Postoperative Treatment," Curtis' three volume "Obstetrics and Gynecology," The Medical Clinics of North America, The Surgical Clinics of North America, Griffith & Mitchell's "Pediatrics," and many other new books and new editions on a wide range of subjects.

Among the many books to be displayed in Booth Number 2 by the C. V. Mosby Company are:

The second edition of Watson's "Hernia," Rea's "Neuro-Ophthalmology."

The fifth edition of Porter & Carter's "Management of the Sick Infant."

The fifth edition of Crossen's "Operative Gynecology."

The sixth edition of Clendening's "Method of Treatment."

These recent releases will be supplemented by approximately 175 other texts.

Sutliff & Case Company, Inc., in Booth Number 3 are manufacturers of a complete line of pharmaceuticals; they will have on display as features this year Thio-Cara, Thiocyan-Tabs, Tin Ox Tablets, and Tin Oxide Compound Capsules. Sutliff and Case pharmaceuticals are always in line with the modern trend of things medical.

The physician who is served by our institution finds more than 1000 medical products from which to choose his weapons to fight disease and death. Many of our products will be on display this year, and our representative will be more than glad to discuss any of our many lines with physicians calling at our booth.

In addition to specialties and standard preparations, a complete line of physicians' supplies and sundries are handled for your convenience.

The Jones Metabolism Equipment Company in Booth Number 16 will feature as their display the Jones MOTOR BASAL metabolism apparatus.

A special feature of this unit is that it contains no water and requires no calculation in the determination of the basal metabolic rate.

The M. & R. Dietetic Laboratories, Inc., in Booth Number 20, will display Similac and powdered Sof-Kurd. Representatives will be glad to discuss the merits and suggested application of these products.

Philip Morris & Company Ltd. Inc. in Booth Number 28 will demonstrate the method by which it was found that Philip Morris cigarettes, in which diethylene glycol is used as the hygroscopic agent, are less irritating than other cigarettes.

Their representative will be happy to discuss researches and problems on the physiological effect of smoking.

Nourishing, digestible, appetizing—these are three outstanding qualities for which HORLICK'S is famous, either the powdered or tablet form. Visit Booth Number 18. You will be interested in the many dietary uses—from infant feeding to old age—note especially the convenience of the Tablets, for interval feeding, in ulcer diets.

In booth Number 23, Lea & Febiger, represented by L. E. Drury, will exhibit the following new works:

Pohle's "Theoretical Principles of Roentgen Therapy," and "Clinical Roentgen Therapy"

Long & Goldberg's "Social Hygiene"

Craig & Faust's "Parasitology"

Fishberg's "Heart Failure"

Davidoff & Dyke's "Normal Encephalogram"

Saxl's "Pediatric Dietetics"

Rowe's "Clinical Allergy"

Brahdy & Kahns "Trauma and Disease"

Levinson & MacFate's "Laboratory Diagnosis"

Werner's "Endocrinology".

New editions will be shown of such standard works as MacKee's "X-Rays and Radium Therapy," Ormsby's "Diseases of the Skin," Joslin's "Treatment of Diabetes" and "Diabetic Manual," Wiggers' "Physiology," Gifford's "Ocular Therapeutics," Bridges' "Dietetics for the Clinician," and other new works and new editions.

The Exhibit of Allergia Bedding in Booth Number 17, intended for the relief of sufferers from Asthma,

Hay Fever and Related Disorders will include a demonstration of dust produced by ordinary bedding fillers . . . cotton, kapok, feathers and hair, and will, by comparison, show the DUST-FREE qualities of Allergia pure silk filling material.

The Exhibit will also feature full size non-atopic DUST-FREE Allergia Pillows and a model of the DUST-FREE Allergia Mattress. We will invite physicians to avail themselves of free vials of Coca's Fluid Extract made from Allergia Filling Material for their use in making scratch tests.

Included with our showing of Allergia DUST-FREE Bedding is the KANTWET Crib Mattress, which not only offers a *WETPROOF non-rubberized* infant bedding piece, but also offers a *DUSTPROOF* protection to sensitive nasal membranes.

Lederle Laboratories, Inc., in Booth Number 19.

It is the policy of the General Electric X-Ray Corporation to try at each meeting of the Illinois State Medical Society, to have an interesting exhibit for the visiting doctor.

All we ask is that he pay us a visit at our Booths, Numbers 26 and 27, and meet our representatives who are very helpful in the matter of x-ray and physical therapy problems.

The C. B. Fleet Company will be found in Booth Number 22. PHOSPHO-SODA (FLEET): An ethical, concentrated preparation of the sodium phosphates in a stable solution. Phospho-Soda is a reliable intestinal and renal eliminant and detoxifying agent, acting quickly without griping or causing tenesmus.

Phospho-Soda (Fleet) has, for fifty years, been recognized by the medical profession as being the desirable choleric and cholekinetic. The ease of administration and flexibility of dosage gives Phospho-Soda (Fleet) a wide range of usage.

The Arlington Chemical Company in Booth Number 29.

Belgard, Inc., in Booth Number 15 will have on display the Guibor Stereoscope and the Dual Service Trial Case, along with many other unusual refracting aids manufactured by Belgard, Inc.

The HAMILTON-SCHMIDT SURGICAL COMPANY of St. Louis will occupy Booth Number 24 during the 1938 annual meeting. They will show some Burdick Physio-Therapy equipment, also some new and interesting surgical instruments including the new Brad-Parker Lahey lock instruments. Mr. Charles Ritzen and Mr. M. J. Latshaw will be in charge of the exhibit.

The DeVilbiss Company has reserved Space Number 25 for the 1938 convention of the Illinois State Medical Society to be held on May 17, 18, 19, at Springfield.

The complete DeVilbiss line of atomizers, steam vaporizers and nebulizers will be in display. Specially featured in the exhibit are illustrations graphically showing the superior coverage afforded by the atomizer in the application of solutions to the nose and throat. These illustrations are based on x-ray research.

Copies of the illustrations for reference may be secured from Mr. E. B. Harvey, DeVilbiss representative in charge of the display.

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NINETY-EIGHTH ANNUAL MEETING SPRINGFIELD, ILLINOIS

May 17, 18, 19, 1938

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Original Articles

COMMUNITY OF INTEREST AMONG THE PROFESSIONS

CHARLES B. REED, M. D.

CHICAGO

Mr. President, and Members of the Chicago Bar: It is with great diffidence that I appear before this honorable Association which has been graced by names that ennobled the legal annals of this City, State and Nation for many years. Moreover the views of this body on professional subjects are only dimly known to me and yet I have a real desire to call your attention to certain matters that seem germane to this symposium.

That there is a community of function among the professions despite a wide basic difference is generally understood but in addition there is always a cognate correspondence in practice; a central thread, personal in character, which holds all three in bonds of close affinity. I refer to the confidential relationship between the appellant and the counsellor. Inherently too is that conscientious service and high responsibility which forms the bulwark for mental, moral and physical stability as well as a stimulus for civic advancement.

In the last fifty years especially, knowledge has become more accurate, and far more widely diffused so that medicine and law, in particular, have been gradually approaching each other on a basis of fact and reason instead of through the more showy qualities of individual eloquence and authoritative empiricism.

This instinctive convergence reveals also a reciprocal increase in depth and sincerity of respect and a greater breadth of appreciation among the members of the professions together with a far more agreeable interdependence. The practical application of this better relationship is clearly apparent in the psychiatry of our unfortunate lawbreakers, and in the criminal and divorce cases which come before the courts. Herein too is manifest to both professions, I am sure, a feeling of relief for the gradual disappearance of the professional medical expert.

The reference to this ingenious gentleman recalls to mind a lawyer whom I examined some years ago for a suspected pneumonia. Having listened for a dull area in one lung, I asked him if he could lie on the other side for a moment. He looked at me quizzically, and replied as he turned, "I am a lawyer, I can lie easily on either or both sides."

Now the law is a subject which involves the study and pursuit of a stable and exact science. It moves forward only by a creeping process of accretion, by precedent and by legislative enactment.

The theology which enveloped my youth was regarded at that time with a conviction so firmly seated and immobile that the soul of man was indubitably safe in its arms. Beliefs however shift by necessity among all thinking men, and as a distinguished Bishop once announced, nobody at present but the printer really believes in a personal devil.

Medicine too is a movable feast. During the same fifty years just mentioned, astonishing changes have swept over the profession and converted medicine from an art to an authentic science.

The bacterial source of the infections and supuration has revolutionized the practice of medicine and surgery. The antitoxins have conquered diphtheria, hydrophobia, typhoid fever, meningitis, tetanus and 62% of the pneumonias. The cause, prevention and control of cholera, bubonic plague, malaria, hookworm, whooping cough, diabetes, scarlet fever, Malta fever, mountain fever, sleeping sickness, syphilis and blindness in the new born are now well understood. The vitamins have appeared and revealed new wonders in food anomalies and deficiency diseases. The miraculous revivification of the cretin, and the treatment of a host of correlated disorders by glandular medication has aroused the world while a thousand new remedies have been added to the armamentarium through synthetic chemistry and glandular experimentation.

In spite of this, while it is sometimes acknowledged reluctantly that a certain amount of application and erudition is required for the proper practice of *law* yet many men do not hesitate to admit that a comprehensive knowledge of medicine, theology and politics is born

with them, and hence needs no systematic instruction. This is particularly true of the politician who not infrequently manages all the professions for private profit and public penalty and pain.

In elaboration of my subject I wish to present briefly a problem of ethics, a problem of practice and a problem of impending trouble which concern us professionally as groups and as public servants.

The American Bar Association has recently declared that it was unethical for medical societies to employ a lawyer for the defense of its members. This dictum was a serious hardship but medical men are always eager to cooperate in any movement which sustains or helps to advance an ethical doctrine, so the Medical Society of this State acquiesced and severed its legal connections.

Nevertheless while the medical profession is especially anxious to preserve and solidify ethical principles which preclude the practice of a profession by contract or by corporations yet this knife, in all fairness should cut both ways. It is not amiss therefore to relate that shortly after this question was decided, State Senator George Nordlin, of Minnesota, and general attorney for the Fraternal Order of Eagles, requested permission to continue the employment of salaried doctors for the benefit of his order. The ethical principle which he was aware of, was presented and insisted upon. He demurred and delayed until the doctors were withdrawn from the Rock Island chapter, whereupon he advised that group to hire other doctors from Chicago who were not members of the Medical Society, to care for his people on a salary basis. This action was taken despite the protests of the Society that he was proceeding along lines that were definitely unethical not only in the creed of the doctors but by the decision of the American Bar Association of which he was a member.

Is this fair, gentlemen? Is it equitable? Is it professional reciprocity? I leave the question to the Bar Association. The Medical Society cannot discipline Mr. Nordlin, but it may be possible to clip the wings of the Eagles for following his unlawful and unethical advice.

Again the doctor is too often harassed by malpractice suits which are without just grounds in 95% of the cases. These nuisance

suits, for the most part, are instigated or encouraged by minor members of the Bar for a personal profit.

For instance, a doctor discharges his patient fairly restored but possibly with some irremediable loss of function; an imperfection which may easily be due to disease or accident rather than lack of care. The doctor sends a bill, say for a \$100.00 which the patient resents as he would his taxes. After some consideration he consults a lawyer who agrees for fifty dollars to settle with the doctor. An action for personal damages is the result.

In this city, through the sympathetic mediation of Judge Sonstebj, I am informed, a movement is on foot whereby a commission may be appointed to investigate the grounds for these nuisance suits with the intent of preventing the palpably cooked-up procedures from reaching the court. Such a commission for the City and State would avert the crowding of docket with unwarranted and injurious actions, would save the State a large court expense, and relieve the doctor from unfair attacks which affect him not only mentally, morally, emotionally and financially but most seriously in his professional reputation. If such investigations were regularly conducted the number of nuisance suits would rapidly diminish.

Every profession has its unworthy members, and the honorable majority should not suffer for the laxity of the few, but lawyers are happily empowered as officers of the court to revoke licenses of the unfit. Medical men, on the contrary, do not have this invaluable prerogative, and the result is shamefully manifest in such examples as the Fernel case, recently on trial, and the even more shameful Schierson affair of several years ago.

The only penalty the medical profession can inflict is the expulsion of the culprit from membership and association with his more conscientious, or at least more cautious, brethren. In effect, however, this leaves the public at the mercy of an incompetent and disreputable practitioner who disgraces the profession by continuing his depredations, and who with the distempered instincts of the magpie seizes, purloins and hoards away every valuable object within reach of his claws.

The problems thus discussed however are of minor consequence. Today, it is a matter of

much greater importance to secure a proper understanding if not a close cooperation of the law and the clergy in a problem which immediately concerns the three professions. I refer particularly to the problem of Government in which one after another we are being enmeshed.

The evidence lies unequivocally before us that the world is undergoing a radical upheaval wherein all the traditional standards are altered or destroyed, and governmental confusion is widespread not only in thought, but in the total absence of that faculty or its perversion. Some countries have sought escape through dictatorships which by government control have martyred the clergy, crucified medicine and reduced the law and its exponents to mere puppets for an extravagant exploitation of a temporary egomaniac who holds his power by ruthless cruelty. This insistent inhumanity is a childish effort to prove an assumption of mental maturity, and it is further fortified by the vast forces of government intrigue which are called in to supply the deficiency in ideals and reason.

The numerous costly failures that emphasize their puerile ineptitude do not however discourage these adventurers. The song of the egomaniac may easily exhibit all the varied melodies of the mockingbird but this will not hide from the astute auditor of that song, the implied portentousness of the raven's call, nor the foreboding note of the vulture which is often realized in persecutions, reprisals and purges. Furthermore a tendency to prefer predilections to facts, and to persist in demonstrated follies in spite of wise advice are the psychological signs of a constitutional infirmity. Government seems to be in charge of mental adolescents.

In America also that liberty of speech, action and life which our forefathers achieved through earnest conviction and strife is under a cloud. I have an abiding faith that our personal freedom will be maintained as long as our Supreme Court endures even though prosperity may disappear through the action of eager, inexperienced enthusiasts and the political bureaucracies which they initiate and uphold but I fear it may leave the professions disestablished, disendowed and destitute.

Thinking people are generally aware of this menace which should receive the uniform opposition of all patriotic citizens without respect to creed, to personal advantage, or political belief,

for the professions are directly essential to the progress and happiness of the Nation. Civilization will falter and fail without them.

The American Bar has barely escaped ultimate obliteration through the attempted prostitution of the noblest group of legal minds that has ever been assembled in the evolution of Government, but this reprieve was not secured without an indignity to the law and its exponents which was resented by our public spirited countrymen from Maine to California.

Rarely has America needed courage, daring and sturdy individualism more than in this day of cowardly self-seeking, and of sleek promises by profit-motive philanthropists for idleness, ease and an income to a pampered and greedy populace. The situation is made worse by the fatuous dreams of the sentimentalists who prate monotonously about equality, a phrase which was invented to suborn rudimentary minds. Equality is biologically visionary, inexistent and impossible for the supreme law of Nature is variety. Nevertheless the social theorists constantly scheme to have all our people systematically herded into selected sties of evenly fed swine over which they may contentedly preside as monitors, self-centered, salaried and secure.

Business, the law, medicine, the clergy and the intelligensia in general are always obstructionists in the path of the egomaniac. Business is now under the harrow, the law is warped and twisted in behalf of government while the threat of herding medicine into a Quixotically devised pen, fenced with the barbed wire regulations of bureaucracy hovers darkly over America. Ignorant laymen, social theorists and adroit intriguers aim with benighted zeal to suffocate and destroy the most competent and progressive medical body which is left free and unspoiled in a crazily ravaged universe.

Words written in a time of uncertainty may easily seem over-solicitous. I hope they are, but even so it is much better to be disturbed by too great apprehension than ruined by a too confident security. Yet many of us, I hope the majority, feel that we stand at the parting of the ways. Either the professions must be maintained in their optimism, their knowledge, ideals, independence and aspirations or they will be swept up in the dust pan of politics and reduced to indifference, pettifoggery and quackery.

In three European countries, the law has be-

come a by-word and reproach. In these three nations, two have abolished all religious ideals and the third has cunningly diverted them to political advantage.

In four nations the practice of medicine, which was once held in the highest esteem and veneration for eminent scientific accomplishment, has become a helpless victim to the quadrumanous activities of the bureaucrat. In one it is reported that 36,000 doctors are supervised by 32,000 bureaucratic employes. Is it irrational for these doctors to seek an escape to America?

The social theorists and the sentimentalists are united in the belief that the ethics and consecration of medical service is so ingrained that it will always hold the same lofty standards, the same aspirations and the same high sense of responsibility in whatever position the doctor may be placed. Filled with this comfortable assumption they plan to sell a questionable expectancy over the counter to charm the corrupt, please those who desire much to be given and gratify their own sense of a royal benevolence with gifts of other men's talents which they hope to administer. One wonders at times whether an ignorant or an unbalanced benevolence is not more injurious to society than a flagrant evil.

May I say now for the medical profession that when socialized medicine walks in at the American doorway, medical standards will fly out at the nearest window, as they have in Europe. Social theorists do not learn by example. Enthusiastic advocates of socialized medicine for America, like Filene of Boston and our own sciolistic Senator were quick to search out American doctors when they were taken ill among the socialists whose medical mediocrities they were striving to foist upon America. It is astonishing that a Senator can decry the barbarities of the wars in Europe and at the same time advocate the destruction of scientific medicine in America with its far greater aftermath of atrocities.

When Lincoln, once a member of this Bar, was besieged by cranks with fantastic schemes for ending the war between the States, he carefully considered and ultimately rejected innumerable half-baked notions that were palpably unworkable, and reserved for a possible trial only those which had some remote promise of value. The present unballasted regime, and its irresponsible accomplices, accept every fallacy,

however absurd and extravagant, tries it first and thinks about it afterward, if at all, only to wonder what happened and put the blame for its failure on other shoulders. With the access of power the shift from ignorance to arrogance is but a step.

It might be expected that the emergency which Mr. Lewis was compelled to meet while abroad would awaken some sense of respect for the instrument on which he had leaned, but this did not occur. On his return, he appeared before the Delegates of the American Medical Association at Atlantic City as the professed but unwarranted emissary of the President, and exploited his orotund tennities for an hour or more in a threat to bring medical men under the bureaucratic control of the Government.

Having failed to receive anything but a polite recognition of his presence, he soothed the swelling in his cankered spleen by introducing a bill in the Senate wherein—every doctor whether young or old, specialist or otherwise, is compelled to render any aid which may be demanded of him by the indigent, that the doctor's bill for the service shall be rendered to the Security Board and paid (probably after being audited, reduced and a percentage abstracted) by the political appointee in charge of the bureau, and finally that a jail sentence shall follow the refusal of the doctor to act when so summoned.

The consequence of such legislation must be immediately apparent to this body. Medical independence and scientific attainment would be overthrown, and the practitioner reduced to the level, or below, of an itinerant vendor of Indian Swamp Root and Radway's Ready Relief for no medical care worthy of the name can exist without a sense of personal responsibility. The dominion of a bureau means stasis, followed by recession and ruin. The practice of medicine *ipso facto* becomes ill-paid, ineffective, ambitionless and dead.

The American Merchant Marine might be used to exhibit the inevitable blight of bureaucracy but an example lies nearer at hand. Let us look for a moment at public institutions which are and have been for years under bureaucratic management.

A bureau, called the Public Welfare Department, controls the penal institutions and all the charities including the hospitals, disabled soldiers, widows and orphans and children of Illi-

nois. There are 50,000 people inside and 10,000 outside the buildings.

The Department employs altogether about 125 physicians who do their work under a lay director who has no knowledge of medical necessities but much of political advantage. The doctors receive from \$150 to \$185 a month, and have been so long in service that they are afraid to complain.

In ten hospitals for mental cases there are 30,000 patients or 330 people to each physician who is expected to visit each patient once or twice a day and spend his nights in writing out his reports. Obviously it is impossible for any man to give adequate medical care to 330 people who are ill, and especially with mental disorders. The army service prescribes seven men to each physician in peace times. (1935) The American Psychiatric Association allows a single doctor 175 patients as the outside limit while Switzerland assigns one doctor to every 100 patients. In this connection also a hospital could be named where 15 doctors carry a load of 4,200 sick persons. In this institution the master mechanic gets \$225 a month and maintenance for self and family. An electrician receives \$200, and a social service worker \$202.50 with travel expenses as compared with the physician's allowance of \$150 to \$185.

Requisitions for necessary drugs are often countermanded by office forces, requests for supplies and instruments cancelled, quantities reduced and substitutions made. Is the beneficent object of this project helped or injured by such political juggling? Nevertheless, by necessity Chicago courts ordinarily send 2,400 people a year to these institutions for treatment.

It would be unjust to assume from this salary report that the bureaucratic mind is wholly unresponsive to the demands of the sick. It is merely a matter of the direction such interest and sympathy may take. In behalf of the Bureau it can be stated the State Veterinarian receives \$400.00 and each County Veterinarian \$270.00 a month for the care of cattle and hogs in the State.

In this one problem the magnitude of mental illness threatens the economic security of society. Such a crisis requires the best that medical art and science can provide but bureaucracy cannot supply this need. Medical matters must be managed by medical men, legal concerns by lawyers and affairs of faith and religion by the clergy.

Each service should be dominated by the men who are best fitted to understand the mechanical necessities as well as the physical and psychological problems.

In the State service the personnel should be adequate, competent and so organized and paid as to develop a pride in the performance of duty, and an eagerness for its advancement. Furthermore the supreme and final jurisdiction should be in the hands of a medical administrator who realizes the needs of the sick and makes the technical relief available by prompt and appropriate action.

This resume of medical affairs is not intended primarily as a criticism of the Director of the Department of Welfare but rather to call attention to the fact that the whole system is distinctly wrong and that its mere existence and method of management aptly exemplify the conditions which will prevail throughout the United States when the profession is harried and oppressed by an ignorant political bureaucracy.

In conclusion, we of the professions are consecrated to the public service, and to a striving for the constant improvement and development of that obligation. Medical men therefore would welcome the friendly approval of the Bar, its comradeship and a generous assistance so far as possible, in the coordination of ethical difficulties; in bringing about conditions that will enable the profession to purify its personnel more efficiently; to aid the establishment of a Statewide commission empowered to pass on the equity of nuisance suits, and especially for a combination, a tripartite alliance with our religious brethren against subversive attacks upon our organizations; the three great professions which must be forever preserved and maintained as the Palladium of the Nation's liberty, the guardian of the people's health and the hopeful guide to their pursuit of happiness and equanimity of mind.

THE INDIVIDUAL IN A FREE SOCIETY

HON. SAMUEL B. PETTENGILL

Member of Congress, South Bend, Ind.

EDITOR'S NOTE: The following is the text of the address delivered at the Opening General Session of the Midwinter Meeting of the Chicago Dental Society, February 14, 1938, by the Honorable Samuel B. Pettengill, Member of the

From *The Bulletin of The Chicago Dental Society*, March 10, 1938.

United States House of Representatives from the State of Indiana.

Since I arrived, about two o'clock this afternoon, I have been promoted. The waitresses in the restaurant, the boys running the elevator, and everybody else has been calling me Doctor, all day long. (Laughter.) And that is a promotion, because it has been well said that—speaking of the doctors of the medical profession perhaps more than the dental profession—the medical profession is the only profession to which humanity erects monuments to their estates. . . . (Laughter.)

I was very happy to accept this invitation to speak on this general subject, both with reference to your position as members of a great, useful, and honorable profession, and also in your capacity as citizens.

Free Choice—There are few, if any, relationships in life more individualistic than that between doctor and patient. In the ordinary case, the selection of the doctor is a free choice, and on the other hand the doctor serves without compulsion. Both are free agents. The relationship is one of mutual confidence. It may be terminated by the will of either at any time. For these reasons, it is natural to believe that in the medical and dental professions individualism will continue to find stout champions, both as doctors and as citizens.

And the more you champion individualism in dentistry, the better citizen you will be.

Outside of the home, school, and church, life does not afford a finer relationship than the one I have described; the relationship between doctor and patient. Nevertheless, one cannot be blind to the facts of our times. The fact is that, from birth to death, the relationship of the privately employed doctor on any scale really adequate to health is beyond the financial reach of many of our people. The fact is, too, that the resulting deficit in health is a social loss of great magnitude. Health is wealth to the individual, the family, the community, the nation. It is by all odds our greatest natural resource. The armed defense of the nation, even, is powerless without it.

And God knows how soon we are going to be tried in another war.

No Dogmatism—There are countless situations which can be reached, if at all, only by methods that go beyond patient and doctor

privately employed. We cannot be dogmatic in these matters. Nor have the professions been dogmatic. Every group has a right to fight for its soupbone, but I do not know of any class whatever which more wholeheartedly admits that the group, the profession, has no right to advance its own interests at the expense of the rest of society. If bankers, tariff lobbyists, labor organizations, veterans groups, etc., always correlated their claims with the rights of society as a whole as completely as is done by the practitioners of the healing art, this would be a better world—a far better world. (Applause.)

It is my belief that the code of the doctor—and when I use the word “doctor” I mean both the medical and dental professions—it is my belief that the code of the doctor is *nearly* as good as that of the politician.

Too many people see life in only two colors—black or white. But life is infinitely colored, infinitely complex. It can be lived successfully only by the greatly tolerant.

Twilight Zone—So let us avoid dogmatism. Between absolute socialization of medicine and dentistry and absolute individualism, no dividing lines, mutually exclusive, can be drawn. Life overruns the boundary. Between the two there is a middle zone, as certain but as indefinite as twilight, which neither the state nor the individual can or should neglect.

What should be our approach to this twilight zone?

Part of it can be dealt with adequately only by the state, and by “state” I mean township, city, county, state, or nation, the general rule being the governmental unit closest to the problem. Sensible men have recognized this for years—for the nation, the quarantine of incoming ships, or inspection of meat products that go into interstate commerce, as examples; for the smaller community, means and methods to prevent contagious disease, disposal of sewage, inspection of milk, water, and the like.

Health of the Public—In these cases the thing sought to be protected is the health of the public, rather than the individual patient. And, in general, for reasons that seem adequate and compelling, state medicine, supported by public taxation, ought not often to go beyond this boundary. There are further exceptions where the state, as such, ought to step in. One is a time of widespread financial distress; and, even

in good times, there is always the case of the very poor who will go without necessary treatment unless the publicly employed doctor or dentist supplies it. These exceptions are well recognized.

Institutional care for the feeble-minded, crippled, deaf, dumb, blind, epileptic, consumptive, mentally ill, and like groups is another exception which society and the professions accept as a matter of course.

But having granted these and similar cases where the common sense of mankind approves the intervention of the state, financed by taxes, we now enter fighting terrain, the field of compulsory health insurance, or state medicine, including dentistry.

Senator Lewis—This has been debated for years, but was precipitated afresh by Senator James Hamilton Lewis, of Illinois, at a meeting of the American Medical Association at Atlantic City, June 26, 1937.

I quote briefly from his address of that date:

"I would like to deliver from the President of the United States a message coming direct with his authority. . . . If I use his exact words, he hoped that you would find a way to cooperate with him in such method as you would jointly find would be to the service of the helpless and the afflicted within such province as you felt the government should undertake."

And then without pretending to speak further for the President, Senator Lewis said:

"Do you know what is going to happen to you? We are compelled to tell you that we have got to treat you as an officer of the Federal government and turn you into being such and ask you to consider the subject of yourself as an official of the Federal government taking care of the citizen . . . the suggestion is that you are to be placed in the position of complete obedience to whatever the law may enforce." . . .

The Senator went on to express his personal, pious hope that "mere political appointees" named for their skill "in stuffing some ballot box" would not constitute the board which "shall sit in judgment on your fees, the method of your payment, and, if you please, sometimes the quantity and quality of it."

Senate Resolution—The following month, July 28, 1937, Senator Lewis introduced Senate Joint Resolution 188, providing for the following:

It shall be compulsory for physicians to render *any* medical aid requested of them by the indigent.

It shall be *compulsory*.

Bills for such services shall be paid by the Social Security Board.

Jail sentences of three months and fines of not over \$1,000, or both for doctors who decline their services, make excessive charges, or try to collect from the patient.

I do not know what sort of a Hamiltonian Senator Lewis now labels himself, but I approach this subject as a Jeffersonian, who thanked God the day Tugwell left Washington for molasses. I hope I approached this subject as an American. . . . (Shouts and applause.)

One of the great difficulties from which we suffer is that we do not read history—enough. And programs often offered to us for our approval or disapproval, if we had read history, we would be better able to judge. I suppose Senator Lewis may have thought he was offering the world something new.

De Tocqueville—A few days ago I was reading one of the great books, written by one of the great commentators, on the American political scene, de Tocqueville. This great Frenchman who wrote before the Civil War, in a book published in 1856, not many years after the gold strike in California, quoted the words of a former Frenchman who wrote in 1755—twenty-one years before the Declaration of Independence and about thirty-five years before the French Revolution. De Tocqueville, quoting this economist of a century before him, used these words:

"A man who urged the absorption of the individual in the body politic. This man held that nothing belongs wholly to anyone. Property is detestable, and anyone who attempts to re-establish it, shall be imprisoned for life"—

not for three month but for life—
"as a dangerous madman and an enemy of humanity."

That was the economic Royalist of 1755.

Then he goes on to say:

"Every citizen shall be kept, and maintained and supplied with work at public expense. All production shall be gathered into the public granaries to be distributed to citizens for their subsistence. All cities shall be built on the same plan; all private residences shall be alike. All children shall be taken from their families at five

years of age, and educated together on a uniform plan."

De Tocqueville, writing in 1856, some eighty-two years ago, commented that this sounds as if it were written only yesterday, and it had been written 101 years before he then wrote, or 183 years ago.

Senator Lewis Again—Now, Senator Lewis comes back with this old theme, and it is the theme which caused, in part, the American Revolution of 1776, and the French Revolution of the 1790's, a rebellion against restrictions imposed from some central point.

Senator Lewis says, with what authority beyond himself I cannot say, that we are to have, not "state" medicine, but "Federal" medicine; that every doctor must take out a Federal license, in addition to his present qualifications; that the profession is to be "placed in the position of complete obedience" to Federal law; that doctors must serve the "citizen"; that their compensation is to be fixed by some board, which he piously hopes will not be "political"; that this board shall also have power to pass on the quantity and quality" of professional services, the number of patients you shall care for daily, as an example.

Streamlined—Well, there you have the streamlined state medicine. If that is it, I am against it! (Loud applause.)

If the Federal government can fix the wage of the doctor, it can fix the wage of the manual worker, or the compensation of the farmer. That is something for union labor and the farmer to think about. And how about fixing wages and salaries, and prices for the butcher, the grocer, the coal dealer, the milkman, the lawyer, the editor, the clergyman? Yes, the editor and the clergyman. With all due respect to your great profession, I apprehend the growing of food, the movement of trains, the manufacture of clothing, the publishing of newspapers, are as indispensable to society as the treatment of teeth.

State Socialism—How can you distinguish state socialism in medicine from state socialism in any other vocation? The doctors may be more vulnerable, politically, as not having a large bloc of voters to be used in their defense. But the principle is the same. And the principle is wrong.

If it is applied to you, it will be applied in a widening circle to all other professions and

trades. As Thomas Jefferson said, "The legal denial of a single individual jeopardizes the rights of all."

That the principle obtains in other lands does not commend itself to me.

Making all allowance for sympathy, as I have tried to do, for the plight of the unfortunate, and as we all *must* do, nevertheless, before plunging headlong into universal serfdom to the state, (and that is what it would be), if your fees and compensation are fixed by political agencies of the government, before plunging headlong into individual serfdom to the state, we should be realistic enough to recognize two things; first, that the need for state medicine is more apparent than actual, and second, that the results of practicing medicine at public expense by political bureaus, even among the very poor, is nothing to brag about.

Economic Waste—The fact is that most people could pay their doctor, if they placed their obligations ahead of their pleasures. (Applause.) The average American family pays more for tobacco alone, more for candy alone, more for booze alone, to say nothing in the toll to gambling, extravagance, and laziness, than it pays to its family physician, and many times more than it pays to its family dentist. (Applause.)

We might as well look the fact squarely in the face that the drive for state medicine finds its chief motive power in the desire to shift the economic burden involved from the shirker to the worker; the shiftless to the thrifty; the waster to the saver; the unfortunate to the fortunate; the drunkard to the sober; in short, to reap where others have sown. (Applause.)

It may be, and apparently in these days it is, political heresy to say so, but I cast my vote for the sober, industrious, thrifty, law-abiding, self-supporting, and self-respecting middle class of America. (Applause.) The time has come to say plainly that they ought not to be taxed to a point where they go without children or where *their* families go without, in order to support those "who sow not." The Bible tells us that "The Husbandman"—not the sluggard—"is entitled to the first fruits of the harvest."

Bill of Extravagance—This drive for state medicine today is largely to get the medical and dental and the other professions to pay the bill

of the extravagances of the people who would be the beneficiaries.

The greatest hope of the unfortunate, the submerged tenth or third of our people is a government which, in Jefferson's famous phrase, takes not "from the mouth of labor the bread that it has earned." Government today, by taxes, takes 20 per cent of the average income, to support the government—state, local, and federal. That is one day of five that all of us are working to support government. How much *more* is it to take?

How much more are political bureaucrats to extract from the pockets of the thrifty, industrious, sober, God-fearing middle class of America?

When you destroy the reward of honest toil, the incentive to sacrifice, the spur to ambition, you are not doing anything permanently good for those at the lower rung of the ladder. All history, ancient and modern, proves that excessive taxation on the creators of honest wealth spells ruin and degradation for all.

The fact is that it is only the competent who can ever take care of the incompetent. We saw that very plainly fifty years ago, in the average American family, where the aged or the crippled, somebody who had lost an arm in an accident, or the blind or the little child, the incompetent—who was it took care of the incompetent? It was always the competent members of the family, and so today, it is only the competent that can take care of the incompetent. We must recognize this fact: *that government cannot take care of anybody.* (Applause.) All that government can do is to reach its hand, through the taxing power, into the pocket of the man who creates wealth, and give it to somebody else. That is all that government can do.

Results of State Medicine—Nor do the actual results of state medicine, even among the poorest classes, warrant its extension beyond those exceptional cases I mentioned earlier. In the ten years 1923-1933, contrasting Germany and England with the United States, we find the greatest advance, not only in the science but in the actual results to human beings of the practice of medicine in our own country. Diphtheria, for example, increased in both Germany and England under state medicine in that ten-year period and decreased in the United States by 65 per cent. Consumption, a disease which walks hand

hand with poverty, in England, with state medicine, decreased 28 per cent, and 45 per cent in the United States without state medicine. The poor, by the fact of the record, have not been neglected by the doctors of America, as much as they have been neglected by the political medical bureaus of Europe. (Applause.)

The fact that there has not been some decrease in the death rate in Europe is due, as I understand in part at least, to the fact that the German doctor, under state medicine, is not *permitted* by the state to charge more than *eight cents* per patient treated. *Eight cents!* How much service does the patient get?

Why should *we*, my good friends, have so *little pride* in our own country, and such *great admiration* for *Russia, Germany and other* so-called social-minded nations? It has never been explained to me how we became the greatest and richest nation in the world by doing everything wrong! (Applause.)

Illness Decreases—The bulletin of the Metropolitan Life Insurance Company for January 1938, ought to be read by these shamefaced Americans. It is a factual record of actual results right here in America, without state medicine, among that company's 18,000,000 industrial policy holders—a group composed almost entirely of wage earners and their families. It shows the following for the year of our Lord 1937:

For all causes of death combined, the lowest in all time; for typhoid, scarlet fever, T.B., nephritis, pregnancy and childbirth, homicides, burns, and railroad accidents, new lows in the entire history of the company; increase in average length of life, one third of a year, to a new *world* record maximum of 60.7 years; deaths from alcoholism, lowest since 1921, 17 years ago; and a decrease in death rate since 1911 among its insured wage earners of 36 per cent, or the equivalent of saving, among its policy holders, of 98,000 lives in a single year, as against the loss which would have occurred under the 1911 death rate.

The cold fact of the record is that a child born today into the family of the average American wage earner without state medicine has the highest life expectancy in the world. (Applause.)

No Apology Needed—Now that is the record among those at the base of the economic pyramid

right here in America! It is a great record. No American need apologize for it to anyone in the whole wide world not even to a German or a Russian!

At the turn of the century we sent over doctors to Germany; today German doctors and dentists come to America to study.

They are smart people. They know where the best schools are—here in the United States of America your country and mine. The people who condemn *our* country most are the hardest to deport! (Laughter.) Yet some of our cal-lowheaded intelligentsia swallow their stuff. When, in God's name, are Americans going to get up on their hind legs and fight for their native land?

But United States Senator James Hamilton Lewis, in the warm glow of his great heart, is going about doing good—with “other people's money”—the taxpayers’—and he says that the Federal government is going to place the doctor in a “position of complete obedience” to Washington, D. C.

At a meeting of the American Bar Association in St. Louis, the early part of last fall, there was one member in attendance who had apparently had a good year, and he bought some of that which comes in bottles that refreshes the inner man, and one evening he was feeling good and generous, and from the fourth story window of a hotel he was tossing five dollar bills down to the crowd below. Do you know what happened to him? He was arrested for impersonating a Federal official. (Laughter and applause.)

A humanitarian is a man who goes about doing good with other people's money. That is the new definition.

Humanitarianism—Now, let me make this perfectly plain. We must distinguish between the true and the false humanitarianism of today. The humanitarianism that was taught us in the Old Testament and the New, that must always prevail in this world or something very precious goes out of the hearts of all of us.

But I am talking about humanitarianism financed by public taxes, which is a forced levy, which the person cannot escape paying.

Now, before adopting this program offered to us by our genial Senator, before lumping this down, just because a lawyer suggests that politicians know more about medicine than doctors, let us ask the preliminary question.

What is Washington, D. C., anyway, and what is *its* record? You go there and see the huge public buildings, bought, by the way, with money taken from *your* pockets which you could have spent in painting your *own* homes, and you are lost in awe and reverence.

But what are the facts of Washington aside from the spending of *your* money there?

Washington is the nation's capital. The District of Columbia is Federal territory. Since the government was established on the banks of the Potomac 137 years ago, it has been and is now under the complete control of the Federal government—the all-wise, all-good, and all-powerful Great White Father. The President is *ex officio* a sort of mayor of the city. It is the home of the G-men, the masters of crime.

That is what you see on the surface. Let us look beneath the surface. Let us see how the Federal government runs Washington. Here are the facts.

Crime Center—Attorney General Cummings recently said that it is a “crime center.” He pointed to the statistics of crime and said that last year, out of 93 cities with a population of 100,000 or more, your national capital was fifth in burglaries, seventh in robberies, third in petty larceny, sixth in grand larceny, seventh in automobile thefts, eighth in assaults, tenth in murders, and for all crime lumped together is in the upper ten per cent of these 93 American cities.

Yet it is the same government that runs Washington that proposes to run you. That is what Senator Lewis proposes. It is this same government running Washington, with crime, gambling, and racketeering galore, that undertakes to tell every state, city, county, business, industry, railroad, bank, bus line, farm, profession, and peanut patch in America how to run its affairs!

If it were not so tragic, it would be laughable. And yet well-meaning people, believe it or not, want the Great White Father at Washington to take over every function of government and business in the nation.

Why, the slums of Washington are about the worst in America. I have here a page torn from the *Washintgon Post* of last week, showing some of the slums of Washington, the nation's capital, under the complete domination and control of the Federal government, and you would be shocked to see them. This article says there are

9,000 homes in Washington which have no inside running water, toilet or bath, and yet the government that runs Washington proposes to run *you*.

More Socialization?—How much farther are we to progress in this gradual socialization of all the energies of America. Are we to have political tribute levied on your profession, and on my profession, the legal profession, the same kind of tribute that is levied in the lesser affairs of the dispensing of liquor, licenses to dance halls, the construction of public highways, the erection of municipal buildings? Why, you know and I know, that it is with the greatest difficulty that we struggle to keep these political racketeers from levying tribute upon our courts of justice and our public schools. And yet some people in the goodness of their hearts are now saying that free enterprise has broken down, and that there is nothing left except for Uncle Sam to run the show.

This organization I see was founded in 1864, during the great war between the states. When Abraham Lincoln was on his way to Washington to assume the heavy responsibilities of the Presidency in the spring of 1861, he passed through Indianapolis, and there he made a little speech, and there is a tablet erected on the Claypool Hotel, which now stands where Lincoln spoke, which quotes the words that he used upon that occasion:

"I appeal to you to constantly bear in mind, that not with politicians, not with presidents, not with office seekers, but with *you* rests the question—shall the union and the liberties of this country be preserved to the latest generation?"

When we speak of the individual of a *free* society, we do not mean a wholly free society. Of course not. Everyone recognizes that it is a proper function of the state to require dentists, physicians, and lawyers to pass examinations to qualify for service to their country; and many other illustrations of that kind can be made. And whenever it is necessary to prevent men from injuring one another, then the state, as I see it, always has and always should attempt a correction; but the function of the state should be essentially negative in telling men what they *may not do* rather than in telling them what they *must do* as Senator Lewis proposes.

If you can do this to the dental and medical profession you are going to do it everywhere.

The other day the House concurred in a conference report on the agricultural bill and it will probably be adopted and signed by the President. For the first time in the history of this country compulsion is to be exercised upon the farmer of America, and if he produces a bushel of potatoes, a bushel of corn, a bale of cotton, a pound of tobacco, beyond what some political bureaucrat says he may do, he suffers a penalty. The thing means, my good friends, that it does not affect you and you alone, or agriculture alone or the railroads alone, or the public utilities alone, or any other sector of our great American enterprise. It affects us all.

Allocating Production—You may be interested to know that the last Congress passed for the first time in the history of this country, a bill allocating industrial production, in the refining of sugar; a bill which said that certain refineries might produce so much sugar and no more, and other refineries might refine the rest of the sugar. Industrial allocation has happened here in America for the first time. If this is to happen generally in industry, what happens?

Let us take the automobile industry. Down at my good home town in South Bend, the Studebaker car is made. It, of course, competes with every other car made in America. How does it compete? How do all the rest of them compete with it? They compete by constantly offering a better and better car, for fewer and fewer dollars, in the ceaseless competition for the consumer's dollar. And everybody benefits by that action. That is the way it is determined how many Studebaker cars may be sold. That is what determines how many General Motors or how many Chrysler cars or how many Nash cars may be sold—by the constant struggle of offering *most and best for least*.

That is free enterprise; that is the way we built this nation. *But it is now proposed* that we are going to say from Washington, if this program continues, Washington will tell Studebaker how many cars it may produce in this coming year; it will tell Nash how many cars of the national quota it may produce, and so on all the way down the line.

What does that mean? That means that government, very soon, will be fixing the wages of the wage earner, because if it says to Studebaker that it may produce only so many cars this com-

ing year, when the factory might produce and might sell more, it means that the working men of South Bend go on the dole, at a time when they might go to work.

And then you come to this thing—you come to political favoritism, and the same slimy fingers of politics will determine the allocation, and you go back to the old story of the King and his Courtiers and favorites right here in America; and the automobile factory that makes the largest contribution to the campaign fund or buys the most of the campaign books (laughter) will get the order, and the struggling little firm will go to the wall, because the little man does not have much voice in Washington, *now* or at *any time* in the past.

Survival of Enterprise—Consequently, when I speak in behalf of the survival of free enterprise, I am not talking about the big and the great and the powerful. I *am* talking about the little man, who wants his chance in the sun, without having to pay political tribute to have a place in the sun. (Applause.)

I wonder what happens when you get political allocation of physicians and dentists and lawyers and automobiles and everything else that is offered to the public—and that program is on the way, as the triple A bill demonstrates, as the bill with reference to sugar refining demonstrates. What happens? You get to the time when political bureaucrats will hold the umbrella over senility and inefficiency, and the big enterprise that has a big investment in factory and plant will see to it that the little competitor is not permitted to enter the competitive field.

You are going to have a constantly reduced standard of living for everybody concerned.

And so in arguing against this drift toward socialization of American industry and the professions, I am not here to argue the case of the *haves* against the *have nots*, of property against poverty. I do not worry about those at the peak of the pyramid. The fact that they are there demonstrates that they need little help or protection from government. I would be just to those at the peak, to those whose courage, enterprise, invention and business genius have helped to make the prosperity not only for themselves but for the nation as a whole. Nevertheless, I do not worry about them.

My concern is for those at the base of the economic pyramid. I know when there is a demand for used cars, the new car market booms,

and when the people stop buying used cars dealers are no longer able to sell new cars, and the damming up of buying at the base of the pyramid very rapidly moves upward to the very peak of the pyramid.

In arguing for constitutional government, competitive enterprise and a humanized capitalism, I do so because of my deep conviction that under a system which preserves these three things, a larger percentage of the *have nots* have climbed into the ranks of the *haves* than under any other system since time began.

Reduced Standards—Contrarywise, it is my belief that the destruction of these principles will mean the same reduced standard of living in America as we have seen abroad, where politicians run business to serve their political ends.

If the history of mankind proves anything, it teaches us that men prosper only so long as they are *free*; and I quote from what was put on the program. Your Committee asked me a few days ago to send them a paragraph.

"The laboratories have done more for mankind than the legislatures. In the professions nearly every improvement can be traced back to the individual rather than the organization. Louis Pasteur did not emerge from a government bureau. Where we regiment personality we shackle prosperity. Man must be free if men progress."

Political and economic freedom releases tens of millions of mainsprings of initiative, enterprise and inventions and new ideas.

As I have gone around this hotel today, seen these exhibits used by your profession in the service of mankind, see how they are coming to the front here in America, new and better equipment, devices, methods of treatment—where do they come from? Do they come from government bureaus? *No!* They come from the breast of some man who has a spark plug and an idea and elbow grease to make the thing work. Under government bureaus these forces are not released.

I must come to a close quickly.

Supreme Court—I wonder if you ladies and gentlemen took part in supporting the Constitution of the United States and the independence of the Courts, in the great struggle of a year ago. *Let me say to you it concerns us.* If any such program as outlined by Senator Lewis is ever passed by the National Legislature, the only escape you will have from serfdom to the state will be a free and independent Supreme Court,

that will say that legislation trespasses upon your Constitutional right, in the property that is represented by your skill. (Applause.)

What is this legacy of free enterprise and Constitutional government which we have received from our fathers? Even with its failures and shortcomings, it is the best in the world. We have 6 per cent of the world's land area, 7 per cent of its people; but that little 7 per cent of the world's population has 32 per cent of the world's railway mileage, 58 per cent of the telephones, 76 per cent of the automobiles, enough so that every man, woman and child under the flag, 130 million Americans could climb into these cars if they wanted to, and all ride on rubber at the same instant of time, a nation on wheels, a miracle of achievement, in which bureaucrats played no part.

The rubber that goes into the tires would go around the world and 6,000 miles to spare, a rubber tired planet, if you please.

When Stalin or Hitler or Mussolini do half as much, it will be twice as much as they *have* done.

American Production. America produces 60 per cent of the world's petroleum, 48 per cent of the copper, 43 per cent of the pig iron, 47 per cent of the steel, 58 per cent of the corn, 56 per cent of the cotton, 33 per cent of the coal.

Of the commodities that we *do not* produce here in America, this little 7 per cent of the world's population under constitutional government and free enterprise, goes out into the world's markets and buys: 50 per cent of the world's rubber, 50 per cent of the world's coffee, 75 per cent of the world's silk.

In the worst year of the worst depression of our history, thirty million of our thirty-two million American boys and girls of school age stayed in public school. And on the point of security for old age, this little 7 per cent of the world's population has not done so badly, because it has 108 billion dollars of protection on the lives of 64 million Americans, and that is more security for old age and for widows and dependents *than is had by all of the rest of the world put together.* (Applause.)

Now, my friends, of the system that has done this thing, with all its faults, follies, crimes and shortcomings, all of which we should diligently struggle to ameliorate as rapidly as we can, the fact of the record is that this free society has produced, *and has distributed more of the goods*

and comforts of living, to more people, over a greater territory and for a longer period of time. than any other system or any other country since Adam walked out of the Garden of Eden. Neither the Princes of Babylon, the Pharaohs of Egypt, the Emperors of Rome or the Dictators of today ever served the common man half so well.

Now I *must* close.

Concerns All. This problem concerns *you all.* It concerns physicians, dentists, everybody in America. One of the great failures of our social organization today is that we do not have any over-all organization, to protect every group in America, from this incoming tide of state socialism. The doctors have their group; the lawyers have their group; the railroads have their group; the manufacturers have their group, and every group stands by. One after the other as it reaches them are driven closer and closer to the precipice.

Somebody once said that the chief difference between men and horses is that horses have horse sense. (Laughter.)

It is rather plain to me that we do not have as much sense as the bison on the prairie of years ago. When they were under attack the bull buffalos formed their ring, with their fighting tools forward, their cows and calves inside the ring, and, *they* presented a united front.

I think the time has come for those of you who believe with me that the question confronting us and for our children is whether we are going back to the same system of restriction and court favoritism, that we had to fight the Revolution and the French Revolution to rid ourselves from: I think the time has come that we who think alike *have got to vote alike.* (Applause.)

We are right up against the gun. One of the greatest struggles in the history of mankind is here. . . .

TREATMENT OF ENDOCRINE DISORDERS

JAMES H. HUTTON, M. D.

CHICAGO

Contrary to the current belief, endocrine disorders are extremely common conditions. Every man, regardless of the specialty in which he may be engaged, is confronted by many such cases. The diagnosis is based on the same foundation

Delivered before the Southern Illinois Medical Association, Pinckneyville, Ill., November 9, 1937.

as that of other conditions; that is, a careful history, painstaking physical examination and pertinent laboratory data. Naturally, non-endocrine conditions should be excluded. Hypofunctional conditions are much more frequent than hyperfunctional affairs. This is probably fortunate because the treatment of deficiencies is usually more satisfactory than that of hyperfunctional states.

The old discussion as to whether a condition is uni- or pluriglandular is no longer heard. Practically every case is a pluriglandular affair when it reaches the doctor. Treatment should be planned accordingly.

The discussion as to whether endocrine preparations are stimulative or merely substitution therapy need not greatly concern us. The fact is that deficiency states are quite common, may be readily recognized and treatment with appropriate therapy is successful in the majority of cases. It may need to be carried on over a period of months and sometimes years, but treatment is not a permanent program. Desiccated thyroid in amounts just short of that producing tremor, tachycardia, nervousness or irritability adds to the efficacy of treatment of any glandular deficiency with the possible exception of Addison's disease and the eunuchoid individual.

The prognosis of endocrinopathies is governed by practically the same factors as that of other conditions. The earlier the condition is recognized, the more adequately it is treated, the better the outlook for recovery.

As it is not possible to cover the entire field of endocrine therapy, I should like to discuss a few conditions which any medical man is apt to meet and in which the diagnosis presents few difficulties.

Growth Deficiencies in Children. In any event one should first determine whether further growth is possible by having films of the epiphyses of the long bones of the extremities. If they are closed, no amount of treatment will cause any appreciable change in height, though it may correct the other signs and symptoms of endocrine deficiency. If the epiphyses are open, treatment should be directed at stimulating growth. Treatment differs depending on whether the growth deficiency is accompanied by obesity and deficient development of the genitalia. On this basis we may divide these youngsters into three groups.

1. The child is lacking in stature but is not obese and the genital development is normal.

Whole extract of the anterior lobe in doses of $\frac{1}{2}$ to 1 cc. twice or three times a week may be used. My own preference is for antuitrin.

Growth hormone in doses of 1 cc. or more may be given every two or three days. This is theoretically better than the whole extracts, but in my hands has been no more successful. If in two months no increase in height has occurred, the dose should be doubled. In another month it may be increased up to 3 cc. per dose.

Anterior pituitary may be given in 10-grain doses three times daily.

Thyroid should be given in such doses as the patient can tolerate. Begin with one grain per day and increase by one grain every fifth day until that amount is reached which causes tachycardia, nervousness, irritability or tremor of the hands or tongue and a pulse rate of about 100. The dose that will produce these changes should be decreased by 25% and continued at that level. The amount in grains necessary to produce these changes is unimportant.

If progress is not satisfactory under this regime, suprarenal 2 grains three times a day should be given or thymus 10 grains three times a day. The role of the suprarenal and thymus is not so well understood and their use should be postponed until after the pituitary and thyroid have proved ineffective.

Naturally, the general health should be looked after in every case.

2. The child is obese and deficient in growth, but the genitalia are normal.

Posterior pituitary extracts will need to be added in such cases to the treatment already described. Pituitrin should be given in doses just short of that which causes annoying intestinal cramps or a bowel movement. This dose is determined by watching the effect of gradually increased doses. Young children should be given 3 minims of obstetrical or surgical pituitrin and kept around the office until one observes whether they have cramps or any other unpleasant disturbance from it. A marked pallor will follow even a dose of 3 minims, but this is of no significance in determining the dose. If cramps do not follow this small dose, then two or three days later the dose should be increased by two minims and so on until the correct dosage is determined.

This should then be given two or three times a week.

3. *Froehlich's Syndrome*. The obese youngster whose height may be more or less than normal but who lacks adequate development of the genitalia.

Thyroid and posterior lobe extract should be used in the manner already described. If the height is normal or above, some gonadotropic preparation should be used. For convenience a partial list of these follows:

Prephysin
Gynantrin
Maturity Factor
Antuitrin-S
Antophysin
A. P. L.
Follutein

The dosage of these gonadotropic preparations should be 50 units twice a week. If in one month there is no evidence of increased growth in the genitalia, this dose should be doubled and in two weeks it should be doubled again if necessary. In the meantime the urine should be carefully watched as the administration of gonadotropic preparations is sometimes followed by the development of glycosuria. Also the long bones should be x-rayed once or twice a year to be sure that premature closure of the epiphyseal lines does not occur.

This treatment sometimes has to be continued for a number of years. However, treatment should be interspersed with rest periods of anywhere from 30 to 90 days. But the child should be kept under careful observation until his genital development is normal and his weight materially reduced.

In some cases antuitrin or some other whole extract of the anterior lobe may be more effective than the gonadotropic preparations. In any event, the treatment is apt to be more effective if one of these whole extracts is used every third week in place of the gonadotropic preparations.

If the child is below average height and also obese and lacking in genital development, the treatment may be given as just outlined except that one should modify it to the extent of using one of the whole lobe extracts such as antuitrin at least one-half the time. If the genitalia reach normal proportions before the height has increased to normal, the gonadotropic medication should be discontinued and antuitrin or some other whole lobe extract used exclusively. Before

the gonadotropic preparations were available I treated many such youngsters quite successfully with plain antuitrin.

Undescended Testicle. This may occur in boys of any height and either thin or obese. In general the outlook is better in the obese. In all cases thyroid should be given as already indicated, but tall boys and those of average weight will tolerate much less than the obese. Gonadotropic preparations should be given in every case. The dose should be 50 units three times a week for one month. If no improvement is noted, this dosage should be doubled the second month. In some cases it is necessary to give 200 or even 300 units per dose. Some men prefer to give a rest period of about 30 days after each series of 20 injections has been given. My own practice is to have infrequent rest periods but to reduce the frequency of treatment after two or three months to two injections per week.

The same precautions as to glycosuria and premature closure of the epiphyseal lines should be observed as was mentioned under Froehlich's syndrome. The rate of growth in height should also be watched and medication changed to an extract of the anterior lobe if the rate is less than normal.

One should assure himself, if possible, that no mechanical defect is present sufficient to prevent proper descent of the testicle. It is not always possible to do this and in any event this line of procedure should be carried out for at least 90 days—and in my opinion it would be better to carry it out for six months—before advising surgical treatment of the condition. In the meantime this treatment will have rendered the surgeon's work less hazardous and more likely to be followed by satisfactory results.

Impotence. Until quite recently most physicians were loath to treat cases of impotence. It was felt that our armamentarium contained few remedies apt to be productive of satisfactory results except as they were a medium of carrying on psychotherapy. This is no longer true.

In young men the outlook is quite hopeful. It goes without saying that the general health should be attended to. Foci of infection, wasting diseases and all non-endocrine conditions should be corrected. All endocrine deficiencies should be recognized and properly evaluated in outlining treatment. These men are apt to have some thyroid deficiency. The adrenals are fre-

quently involved. The pituitary is usually the primary seat of the trouble. Up to middle age, one of the gonadotropic preparations should be used in practically every case, usually in doses of 50 units three times a week for a couple of weeks, then 100 units twice a week for two weeks, if satisfactory results have not been achieved, then once a week until the condition is corrected.

In men of middle age or beyond, the gonadotropic preparations should be used with some care owing to the danger of inducing prostatic hypertrophy. The same general treatment should be pursued here as in the young men; that is, attention should be paid to general health, foci of infections, all endocrinopathies, etc. In men of this age some of the male sex hormone preparations will need to be used in nearly every case. These should be given one ampoule three times a week for two weeks, then twice a week for two more weeks and then once a week until the desired results are obtained.

In the female frigidity should be treated in younger women by the gonadotropic preparations as already mentioned for males; that is, the same material and the same dosage. They should also be given ovarian substance or some other estrogenic preparation. These can either be given alternate weeks with the gonadotropic preparations or they can be given at the same time.

Sterility. In young men this can undoubtedly be corrected in many cases by this line of treatment. Sterility in the female will also frequently yield to this treatment.

Prostatic Hypertrophy. This condition is undoubtedly connected in some way with a decline in the production of the male sex hormone or with the failure of utilization of the sex hormone from the anterior lobe. Lower and McCullagh¹ report a considerable series of cases benefitted by orchic substance by mouth. They used large doses, approximately 900 grains of the desiccated gland daily. The male sex hormone is said to be useful in the same condition. Undoubtedly every victim of prostatic hypertrophy, unless he is faced with an emergency operation, should be given the benefit of endocrine therapy before he is subjected to any surgical procedure.

In addition to the endocrine materials described, we have low-dosage irradiation, which has been found quite useful in a number of conditions. For a good many years it has been noted, and it is now generally recognized, as be-

ing valuable in the treatment of menstrual disorders—amenorrhea, dysmenorrhea and menorrhagia. It is not so widely discussed in the treatment of symptoms of the menopause, but it is equally valuable there. Every roentgenologist probably has his own dosage. My own feeling is that very small doses should be used and not repeated too frequently.

In the last few years we have been using low dosage irradiation of the pituitary and adrenal regions in the treatment of hypertension and diabetes. The results in hypertension are shown in the following tables:

TABLE 1. HYPERTENSION

Improved	147
Improved but relapsed	27
Unimproved	78
Insufficient treatment	52
Can't be followed	27
	<hr/> 331

TABLE 2. EXPERIENCE OF OTHER MEN

	Cases	Cases Improved
Martin	100	80
Baker	40	30
McGuffin	40	30
Boswell	12	11
Finch	12	9
Konantz	6	3
Parkhurst	5	3
Hadley	4	4
Miscellaneous	56	47
	<hr/> 275	<hr/> 217

Symptomatic relief is much more marked than reduction of blood pressure, but those listed as improved experienced both.

Hypertension and diabetes bear a very close resemblance. The following table shows our experience in treating these two conditions coexistent in the same patient:

TALBLE 3. HYPERTENSION AND DIABETES

Improved as to both conditions.....	12
Improved as to hypertension only.....	8
Improved as to diabetes only.....	4
Improved but relapsed.....	2
Unimproved	1
Insufficient treatment	6
Can't be followed.....	1
	<hr/> 34

This is a very simple and, in the dosage recommended, an entirely safe procedure. There is not the slightest danger of causing Addison's disease or hypopituitarism. However, the observation of certain precautions adds to the likelihood of success in any case.

1. Use small doses of the x-ray.
2. Don't repeat treatments too often.

3. Don't give treatment during or within week before menstrual period.

4. Irradiate both pituitary and adrenals on the same day.

In conclusion: Endocrine disorders are extremely common and widespread. Their recognition is no more difficult than the diagnosis of other conditions. Treatment for the most part is by specific medication and the results are satisfactory in most cases where treatment is carefully and persistently carried out. These conditions should be treated when recognized. Nothing is gained by waiting. The child will not outgrow his deficiency though he may outgrow his opportunity for relief.

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ENTERITIS

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Enteritis may be defined as inflammatory disease of the small intestine. It may or may not be accompanied by colitis, duodenitis, cholecystitis, or gastric pathology. It may be acute or chronic.

The etiology of chronic enteritis, which we shall discuss, is not entirely settled. It may, however, be:

1. Mechanical: as by irritating foods or ingested substances such as bran.

2. Chemical:

(a) hematogenous, as by mercury which is excreted in part through the small intestine;

(b) direct, by drugs and cathartics which act on the small bowel following gastroenterostomy, where acid contents of the stomach are thrown directly into the jejunum.

3. Bacterial:

(a) specific, such as typhoid bacillus in the ileum, also vibrios not rare;

(b) non-specific, which occurs in achylia, duodenitis, following gastroenterostomy.

Probably enteritis always descends from above except when associated with a chronic colitis. It descends in passive congestion where the small bowel is readily infected or irritated.

Morbid anatomy: In newer cases there is hy-

pertrophy of the mucosa, with increase in size and number of mucous glands. Hyperemia of mucosa is also present. Later there is a thinning of the bowel wall, with atrophy of the mucous membrane and involvement of the serosa.

Symptoms: 1. Subjective. The symptomatology of chronic enteritis is confusing, inasmuch as it may simulate gastritis, peptic ulcer, gall-bladder disease, chronic colitis without diarrhea, or appendicitis. Many patients who suffer from this disease are grouped as "nervous dyspeptics" or as hypochondriacs. Often there are "heartburns," occasionally chronic unexplainable vomiting.

Pain is sometimes present, coming on after meals as in peptic ulcers. It is usually radiating to the left hypochondrium, is colicky in nature, and is much shorter in duration than ulcer pains. It is very infrequent for this pain, however, to be relieved by alkalies, as is ulcer pain.

A feeling of "unquietness" in the abdomen, due to the speed of passage of food through an irritated small intestine and to the violence of the peristaltic waves, is often complained of.

Flatulence is an almost universal phenomenon. This does not occur in the small bowel, but in the colon, and is due to the fermentation of the large amounts of undigested starch that are thrown into the cecum.

Finally, there is an indescribable feeling of nervousness after food, most often after the evening meal. There may be sweating, hot flashes, vertigo, a feeling of extreme weakness, or even fainting due to the mesenteric engorgement (so-called abdominal apoplexy). These cases have been mis-diagnosed epilepsy very frequently and account for some of the "cures" which occur spontaneously in this disease. Often, when a patient comes in with an abdominal complaint he will inform us his appendix is sore, or that he has pain in the region of the liver. Not so with the sufferer from enteritis. His pains are indefinitely located and flitting, although they may at times be severe. He is nervous, his heart pounds so he must walk the floor at night; he feels he is going to die when the gas crowds his heart. Never does he come in saying his small gut is out of kilter.

2. Objective: The most important objective symptom of enteritis is the presence of a tender area to the left of the umbilicus, often midway between umbilicus and costal margin, about two

inches to the left of the midline. The patient is usually thin.

The ileo-cecal region may also be tender, as a result of the inflammation about the cecum. It must be remembered in enteritis as in all other bowel infections that there is no deep tenderness unless, by direct extension or extension through the lymphatics of the bowel wall, the peritoneum is involved.

Most important are the laboratory findings. The x-ray gives but little information as to the small bowel except in obstructions. In enteritis there is usually observed a rapid emptying of the stomach, with hyper-peristalsis, and barium taken after a full meal is frequently present in the colon within two hours after ingestion. The x-ray is not necessary to establish a diagnosis, but may be of value in ruling out gall-bladder or stomach pathology.

The feces examination is of the utmost importance. In order to see why, let us briefly review our physiology of the small bowel.

Excepting the small amount of absorption which takes place in the stomach, all digestion of fats, proteins and the higher carbohydrates takes place in the small bowel. The colon digests nothing, but is an excellent incubator for the putrefying and fermenting masses which enter at the cecum.

In chronic enteritis the passage of carbohydrates, fats and proteins (in the form of meat fibers) through the jejunum and ileum has been very rapid. Digestion is not complete when these half-dissolved particles are thrown into the cecum. Digestion stops. With the food materials is an enormous amount of mucus from the ileum (estimated in severe cases at three quarts in 24 hours). Would we expect mucus and undigested starch granules in the feces? Not unless there was an accompanying colitis with rapid passage through the colon. Due to the fact that the colon holds this undigested material for 12 to 36 hours, the mucus and meat fibers putrefy, the starch ferments, causing the gas mentioned under symptomology and the sole remaining pathological finding in the feces is the enormous increase in fat globules, fatty acid crystals and soaps.

The feces may be whitish; they are nearly always light in color due to the soaps. The microscope may show many starch granules, especially if the colon has also been irritable and emptied before the fermentation had completed.

Under these circumstances the meat fibers may also be present, but are often square-cut, instead of presenting the rounded appearance of a piece of melting ice.

The diagnosis, therefore, is established on the basis of the fecal content.

The blood and urine are not of necessity changed by chronic enteritis. While, at times, a cecitis may cause an increase in leucocyte count to 9 or 10,000, there is little rise due to the enteritis itself.

Complications. The most frequent complication of enteritis is, of course, inflammation of the cecum, followed by colitis. This is often heralded by repeated attacks of mild diarrhea.

Appendectomy frequently complicates the picture about this stage, due to the tenderness about the cecum. The patient has digestive symptoms, loss of weight, and a hundred? Presto! Out comes his appendix, in spite of his low blood count. Ten days in bed, with starvation diet for the first three, makes him feel fine. In a month or two he is back, with his symptoms sufficiently altered that he never realizes his operation has been useless. Appendectomy never cures these cases, and is sometimes very embarrassing to the surgeon.

Finally, after the lapse of months or years, a true colitis with diarrhea will probably supervene. When this happens, we no longer are dealing with enteritis, but with enterocolitis.

Due to the scant time for absorption hypochromic anemias are frequent complicators of these cases, especially in cases associated with achylia. These may be mis-diagnosed pernicious anemia, which they greatly resemble. The color index will make the distinction.

Hunter's glossitis is frequent in chronic enteritis, and is not necessarily associated with achylia, as is generally understood. Fever may be present, with other toxic symptoms, leading to diagnosis of tuberculosis. They may have backaches, leg pains and other toxic symptoms. Chronic urticaria is not infrequent, due to the increased permeability of the injured intestinal wall to proteins.

Gall-stones may be induced by entry of germs or toxins through the portal circulation. At any rate, many chronic sufferers from enteritis develop gallstones after a number of years. This is well known to be true with typhoid; why not in non-specific infections of the bowel?

Differential Diagnosis. 1. Appendicitis. Low

blood-count, tenderness to left of umbilicus, with hyperesthesia of abdominal wall at that point. Chronicity, pains colicky and transient.

2. Peptic ulcer may have pains very similar, but again we have the relief by alkalies in ulcer and the greater tenacity of ulcer pains.

3. Cholecystitis may present a more difficult problem, but the location of the tenderness, the x-ray findings and the stools will make diagnosis possible.

Treatment. 1. Dietetic.

Diet must be one to give the inflamed small intestine rest. As in all chronic diseases, there must be no period of starvation or starvation diet.

Cellulose in any form must be prohibited, not because of the mechanical irritation but because of the chemical one. We have no cellulose-splitting enzymes, but the fermentative bacteria in the large bowel have, and will form large quantities of gas with the undigested fibers of cabbage, beans, corn, etc.

When achylia is also present we forbid potatoes and peas. Meat should be taken very sparingly; should be boiled or baked, and must be lean.

No spices of any sort are permitted.

✓ Patient can eat milk, cream, cheese, potatoes, porridge, tea, coffee, cocoa, juices of fruits and vegetables, and various pastries. In severe cases only mashed and liquid food may be taken but this diet may not be continued for long.

The diet closely follows Dr. Alvarez' smooth diet.

2. So far as medicines are concerned, it is very important not to use laxatives, since they can only pour fuel on the fire. They always irritate.

If constipation is troublesome, milk is laxative without irritation, due to the lactose present. Better yet is Beta-lactose, which does not ferment with the production of gas. A tablespoonful before meals will often aid very much in establishing normal defecation. Fruit juices are also of benefit.

Mineral oil may also be used, especially if the astringent drugs are prescribed.

Astringents: (a) Tannigen, or other forms of acetyltannic acid, are of value when treatment is first started, in dosage of five to ten grains before meals for about two weeks. (b) Bismuth subcarbonate or subgallate are useful if there be hyperchlorhydria.

Absorbents, such as charcoal, are useless, since the gas in the bowel is in the colon, and the wet charcoal is incapable of absorbing gas.

Antiseptics are also useless and in many cases irritating. They can only do harm.

Vaccines have not been shown to be of value in uncomplicated enteritis.

Diet, then, is the method of treatment which gives most chance of cure. It must be carefully followed for many months, since backsets are as frequent as in colitis, and cure cannot be certain for several months after the cessation of all symptoms.

THE FUNDAMENTALS OF WATER BALANCE IN SURGERY

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The value of water balance in surgical patients while generally recognized is ordinarily too little appreciated. Within the past few years much attention has been focused on the water balance in the body mainly through the work of Collier and Maddock and a rational method of supplying fluid to surgical and certain medical patients is now essential. For many years saline solutions have been given in inadequate amounts or on the contrary much too excessive amounts without a clear idea as to the amount needed. It is essential to have a definite knowledge of the type of solution to use, whether it be normal saline, Ringer's or glucose solution, the rate and method of administration and the amount. Normal saline, the time honored solution, has since about the period of the World War been largely supplanted by glucose although glucose was probably first suggested and used for hypodermoclysis by Gaule, a Swiss surgeon, in 1885. This paper is given with the hope of summarizing the newer knowledge of this important adjunct in the care of surgical patients and to point out the rational of the various solutions. While we are not prepared to enter into a detailed discussion of the complex physiologic mechanisms of water balance and feel this is not necessary here it is well to consider some of the essential fundamental factors as they occur in health and disease.

In health the water balance is kept at a fairly

constant level by an automatic fine adjustment between the water available and that excreted. Water is lost from the body through four main channels: 1. kidneys, 2. skin, 3. lungs, 4. feces. Through these channels large amounts of water are constantly being removed from the blood and the loss must be made up by the ingestion of new water. The body normally maintains a fixed amount of water, comprising 65% of the total body weight, and when taken in excess is promptly excreted mainly through the kidneys. Normal kidneys act according to the amount of water available so that waste products are excreted in urine of high specific gravity when available water is low and with low specific gravity when it is high. The inorganic salts excreted in the urine are chlorides, phosphates and sulphates derived mainly from the salts ingested in food and to a less extent formed in the destructive metabolism taking place in the body tissues. There is excreted normally through the kidneys 35 gms. of waste materials in 24 hours. The minimum amount of water necessary to carry this away without putting undue work on the kidneys is 500 cc.; less than this amount of urine in 24 hours results in retention of waste products and elevation of the N. P. N. in the blood can be expected. If there is kidney damage, larger amounts of water are necessary for this purpose so that approximately 1500 cc. of urine volume per 24 hours are calculated to take care of waste product excretion by the kidneys for all purposes. Of the waste products, sodium chloride occurs in largest quantities, averaging 15 gms. per 24 hours. The water volume of the urine normally varies between 800 to 3000 cc., according to the thirst of the individual, averaging 1500 cc.

Water is lost through the skin by secretion of the sweat glands, which are found over the entire cutaneous surface except in the external auditory canal, the prepuce and glans penis, the total number being estimated at about 2 million. When perspiration is formed faster than it can be evaporated, it is termed sensible perspiration and when evaporation occurs faster than it is formed, it is termed insensible perspiration. There is also a certain amount of water given off by the epidermal cells themselves. As is well known, the chief function of the perspiration is in its relation to the heat regulating mechanism of the body, the sweat glands being activated by high external temperatures or during muscular

exertion. About 25% of the total water loss takes place through the skin. The composition of the sweat is important because chlorides are lost in the sweat in noticeable amounts and in excessive sweating the sodium chloride store of the body is much depleted, and to this is attributed the symptoms occurring in individuals working in high temperatures. This accounts for the popularity of the salt tablets now used extensively in heavy industry.

Water loss from the lungs is difficult to determine, but is estimated at about 500 cc. The combined water loss from the skin and lungs varies between 1000 to 2000 cc. daily and is spoken of as insensible water or water of vaporization. In the feces normally the water loss is unimportant, varying from 60 cc. to 200 cc., rarely exceeding 200 cc.

The physiological purpose of water excretion is two-fold: 1. to eliminate waste products through the kidneys and 2. to regulate body heat by vaporization through the skin and lungs.

To summarize in health, the water loss may be calculated as follows:

Excreted by kidneys.....	800 to 3000 cc.
Vaporized by skin and lungs.....	1000 to 2000 cc.
Feces	60 to 200 cc.

Available water in health is derived from four sources: 1. water in food, (2) water drunk, (3) water of oxidation and 4. performed water. Water available from food is surprisingly large; meats are composed of 50% water, fruits and vegetables contain 75% water. The ordinary regular diet will furnish 1000 cc. water and a liquid diet about 500 cc. in addition to the water drunk.

Oxidation of the component parts of ingested food, carbohydrate, fat and protein, furnished an additional amount of water—about 200 to 400 cc. Performed water is the body water attached to the tissues and is liberated in its oxidation. This is unimportant in health, but may reach 200 cc. in starvation.

With the ordinary surgical case we are not concerned. Within 12 hours he will begin to take fluids and the water balance is not much disturbed because he can easily get along on his reserve, but with the severe case there are factors which immediately tend to change the picture and, unless recognized, serious dehydration results.

The symptoms of dehydration are dry, hot skin, a dry tongue, sunken eyes, some fever,

delirium and a low urine output—insufficient to dissolve and carry away the waste products. The urine may show albumin and RBC. In addition to the fact that many patients refuse or are forbidden to take fluids post-operatively, the water of vaporization is greatly increased by any inhalation or spinal anesthetic because of the vascular dilatation associated with them. High temperatures in operating rooms and too many blankets on the operating table, coupled with the practice of placing the patient in an "ether bed" after operation, tend to maintain this dilatation so that more water is lost by vaporization, especially if there is attendant fever. It is estimated that in this manner the water loss by vaporization, emesis and blood loss will amount to 2000 to 2500 cc. during the time of operation and the following 10 hours. This can be much diminished by placing patient in a previously warmed bed with only the ordinary amount of covers. No post-operative pulmonary complications will result if this procedure is carried out.

In addition to the water of vaporization and urine loss, large amounts are lost if there is vomiting, diarrhea or intestinal or biliary fistulæ. This loss may be enormous and is important because, in addition to the water lost, it is through this route that the greatest chloride loss occurs—about 5 gms. sodium chloride per 1000 cc. of vomitus. The volume lost by this means should be recorded because it must be replaced volume by volume by salt solution, preferably Ringer's. In this connection it is desirable, if possible, to check the blood chlorides which normally occur in the amount of 450 to 500 mgms. per 100 cc. of whole blood. This can be rapidly and easily done with the LaMotte blood chloride outfit.

To adequately determine the amount of fluid to be given, a careful record of intake and output must be kept. This is simple enough because as a rule the fluid loss may be easily measured. It is confined to urinary and intestinal tract output and, in addition, the water for vaporization which is going on all the time. Therefore, the fluid supplied must equal any loss as follows:

1. Water for vaporization.....2000 cc.
2. Water for urine.....1500 cc.
3. Water equivalent of gastrointestinal tract loss,
biliary fistulæ, etc.

For the average patient the minimum fluid intake then should be 3000 to 3500 cc. in 24 hours. One can be assured of an adequate water supply

if the urine excretion is between 1000 to 1500 cc. with low specific gravity.

A satisfactory chart for recording intake and output should show at a glance the fluid taken by mouth and clysis and the output record should show water lost through 1. urine, 2. gastrointestinal tract and 3. fistulæ over consecutive 12-hour periods.

In certain cases additional calculations must be made; for example, in the presence of massive exudate and sometimes increased salivary secretion may remove important amounts of water and must be provided for. When such abnormal fluid losses are not taken into account and the patient is seemingly receiving sufficient water, the resulting low urine output may be attributed to toxic suppression of urine, whereas the patient in reality is dehydrating.

In the use of saline solutions certain points should be considered. Sodium chloride is not always indicated and at times may do much harm when its use is ill advised. Unless there is a high chloride loss, as in intestinal tract fluid loss, it should be used with caution. While it is isotonic with the blood, the solution contains a higher concentration of sodium chloride than the blood. This may result in salt retention in the tissues because of the change in the osmotic mechanism, especially if there is some damage to the kidneys and edema is produced. Furthermore, large salt solution infusions may cause fatty degeneration of the parenchymatous organs, especially the kidneys, which interferes with the elimination of sodium chloride. Formerly this called for cessation of fluids and diuretics, but more recently it has been found that if the sodium chloride is omitted and glucose in distilled water is substituted, the edema rapidly disappears. This fact must be considered when glucose in physiologic salt solution is used. It seems that in Ringer's solution this phenomenon is less likely to occur, due to the presence of potassium and calcium chloride, and Ringer's solution is therefore preferred by most surgeons. It would appear then that large quantities of saline solution are contraindicated unless there is a large chloride loss, as in excessive diarrhea or vomiting. The practice may be definitely dangerous and if carried to extreme may result in edema of the lungs and even death. It should be used only for a short time or alternated with glucose in sterile water. In this way edema can

be prevented or corrected as soon as it appears. One should remember that in 3500 cc. of physiological saline solution there is about 31 gms. of sodium chloride—twice the amount needed by the body in health. When it is necessary to keep patients on clysis for very long time, edema of a different type occurs, especially when there is much vomiting associated with prolonged supuration. This results in a diminution of the serum protein, and when the serum protein content drops low enough fluid leaves the blood and goes into the tissues and extensive edema (nutritional edema) results. This is unusual and does not occur until late. Repeated small whole blood transfusions are indicated.

Hartman's solution (which is Ringer's solution to which sodium lactate has been added in 5% glucose) is invaluable in the treatment of acidosis resulting from kidney insufficiency in the presence of dehydration.

Glucose solution should be given to all patients who receive nothing by mouth. It furnishes food, conserving the glycogen in the liver and muscles and prevents ketosis. 5% solution is isotonic with the blood and in most instances should be used in this concentration when maintaining the water balance. 10% solution is hypertonic and tends to produce dehydration rather than hydration.

The therapeutic value of acacia solutions intravenously should not be overlooked. When the blood volume has been much lowered from any cause, acacia solution is excelled only by blood transfusion itself in restoring the blood volume. While salt solutions are valuable in these cases, the effect is transitory, since the solution diffuses through the capillary walls and is rapidly lost to the circulation. On the other hand, acacia solution remains in the blood stream for a much longer time and retains the water associated with it, resulting in sustained rise in blood pressure. The solution used is 6% acacia in normal saline plain, or with glucose in amounts of 500 to 1000 cc. Excessive amounts over 10000 cc. should be given with caution, however, because of certain deleterious effects attributed to its long retention. The solution should have an amber color and must never be used if it is turbid or dark brown. In view of the increasing number of highway accidents associated with serious hemorrhage, all hospital emergency rooms should have acacia solution immediately available.

METHODS OF ADMINISTRATION

Proctoclysis: Experience has shown that in the very grave patient proctoclysis is frequently of little service; it is either expelled or not absorbed at all, especially if the portal circulation is impaired, as in general peritonitis with distention. In reality, a rectal pouch filled with water from proctoclysis is merely filled with sewage.

Hypodermoclysis in some institutions is not given at all because it is apparently next to impossible to have it given properly. An improperly given hypodermoclysis is an extremely painful performance, but if it must be given it should be given under the pectoral muscle, with the needle directed toward the mid point of the clavicle, never in or under the breast, since this is very painful and the distention may cause massive sloughing due to interference with the blood supply of the breast. In infants and young children the site between the scapulæ is selected.

The method of choice is the intravenous drip and, while it is not without its discomforts, it is at least the most painless. The most convenient site is a vein at the bend of the elbow. Occasionally it may be necessary to cut down on a vein in a fat individual, but as a rule this is not necessary. Often a varicose vein in the leg may be found if no other veins are available. However, this is not desirable because of the relative greater tendency to thrombosis in the veins of the leg in adults and should be used with caution. In infants and children the vein running over the internal malleolus is used, but here it is necessary to cut down on it. A needle rather than a cannula will be found satisfactory. The needle can be tied firmly in place by tying a flat rubber tourniquet, cut from an auto inner tube, lightly around the arm at the site of the vena-puncture so as to include the shank of the needle. This will be found more satisfactory than strips of adhesive plaster. When a continuous drip is necessary, especially in a restless patient, a plaster trough moulded to the arm from the axilla to the base of the fingers is desirable. The elbow slightly flexed with the hand in partial supination is the most comfortable position. With this arrangement a continuous drip may be maintained for days at a time. While the solution may be given as fast as 500 cc. per hour, the proper rate of flow for a 5% glucose solution is about 90 drops per minute, delivering about 360 cc. per hour. With

a 10% solution, about 45 drops per minute. When given faster than this rate, the glucose is likely to spill over and most of it will be found in the urine and consequently is not utilized. Care should be taken in warming the solutions, especially those of high glucose concentration, that the heat is not excessive, since caramelization may take place. This causes the solution to become light yellow or brown. Any dextrose solution that is not crystal clear should not be used. Room temperature of the solution is sufficient. The use of hot water bottles or elaborate warming apparatuses about the solution container is not necessary.

The solutions and accessories for administration marketed by the various firms are entirely satisfactory and undoubtedly are better than can be made locally. We have used these solutions for several years and I know of no reactions or other difficulties arising from their use.

Much emphasis has been placed on preventing air from entering the circulation. This danger is much overestimated. The circulation will take care of considerable amounts of air without untoward effects. Experimentally, it has been proven that it is only the sudden and forceful injection or aspiration of air into the circulation that may cause trouble. Thrombosis of a vein may occur, but is not likely to happen if the flow is kept at the proper speed and the needle point lies free in the vein lumen.

In order to prevent reactions it is important to use pure gum rubber tubing, and new tubing should be prepared in the following manner: 1. soak in water and green soap 1 hour, 2. wash well with soap and water solution, 3. wash well in running water, 4. soak for 6 hours in 4% sodium hydroxide solution, 5. wash well in running water, 6. wash well in distilled water, allow to dry and sterilize in autoclave.

In conclusion, it is realized that in a complex subject such as this many points have been omitted and many questions remain unanswered. However, in this discussion an attempt has been made to call attention to the water requirements of the body as they occur in health and to point out the importance of maintaining this balance in the serious surgical patient by the administration of the proper kind of solutions and in the proper amounts as they appear to be indicated.

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RUPTURED ANEURYSM OF LEFT GLUTEAL ARTERY WITH OPERATION

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HERRIN, ILLINOIS

Case Report

In giving this case report I feel, for the sake of continuity, that it is quite important to give the preliminary care of this patient preceding the actual rupture of the aneurysm.

This patient was first seen by me in the early part of September, 1932, at which time she was suffering with a train of rather obscure symptoms, chief of which were referable to her pelvis. She complained of pain in the left lower abdomen associated with pain in the left kidney region, accompanied by fever and an occasional light chill. She also complained of aching pains in the joints, particularly her ankles, knees and shoulders. She gave a history of having had an abortion several months prior to this examination which necessitated a curettage.

Examination at this time revealed a white woman, aged 32 years, slightly undernourished and apparently suffering from an acute illness of a toxic nature. Patient was running a temperature of 101, pulse 110, respirations normal. The tonsils were absent. There was a moderate amount of dental repair work in the mouth and two or three suspicious teeth. There was a loud, blowing systolic murmur heard best at the mitral area but rather diffuse over the precordium. The heart was not enlarged. Pelvic examination disclosed tenderness in the left adnexal region with slight fullness in the same area. There was some tenderness on deep palpation of the left kidney. There was no visible swelling of any joints. Patient gave a definite history of having had aching pains in her joints for many months prior to examination. Urinalysis: pus cells, four plus; albumin, trace; otherwise negative. Kahn examination of blood gave negative result. With these findings our conclusion was that the patient was suffering from chronic cardiac valvular disease, chronic articular rheumatism, pelvic cellulitis (postabortal) and left pyelitis. Patient at this time was confined to her bed and remained so for about one month, receiving treatment for the pelvic cellulitis and pyelitis. She was occasionally given small doses of digitalis for control

of her cardiac condition. There was decided improvement in the pelvic and kidney conditions.

Patient during the first part of October was able to be up and around some and returned to her home in Johnston City. About October 8, 1932, she was seen suffering from a typical attack of coronary occlusion. The pain came on suddenly, was excruciating and crushing in character, situated in her substernal region and referred to her left shoulder. She was very pale and there was no question as to the diagnosis. She responded to large doses of opiates and was kept at absolute rest in bed for a period of one month, after which time she was allowed to be up for short periods.

It was shortly preceding the coronary occlusion attack that the patient had called my attention to the presence of a pulsation in the left gluteal region which she jokingly described as "a heart in her hip." The pulsation was localized to the central portion of the buttock and could be distinctly felt; it was also visible as a diffuse pulsation. Patient was questioned as to an injury in this region; she stated she remembered having fallen about eleven years prior to this time striking her hip rather forcibly against the ground; the hip remained moderately sore for a few days but little attention was paid to it then.

From this time, October, 1932, to the following October, 1933, very little happened in the course of the case. There would be periods of improvement in the general condition followed by moderate relapses when the patient would be compelled to remain in bed. During this year she received treatment occasionally for arthritic symptoms. Two or three infected teeth were removed, followed by exacerbation of the arthritis, then improvement. The urine remained clear and there was gradual improvement in the pelvic condition. The pulsation in the gluteal region gradually and progressively grew more pronounced. It became extremely diffuse and affected almost the entire buttock. The movement of the buttock could be seen plainly at a distance and a muffled bruit could be heard. The patient now complained of pain in the hip, at times rather sharp in character, and there was much aching in the thigh and down the lower leg along the course of the sciatic nerve.

On October 13, 1933, during my absence, patient had a fall, striking her left hip against a step in her home. This was followed by severe pain and swelling in the buttock. Another physician was called who administered an opiate for relief of pain and advised rest in bed until the return of her regular physician. On Monday, October 16, when I first saw the patient following her fall, she was suffering from severe pain in the hip. Examination disclosed a marked boggy swelling and beginning discoloration of an ecchymotic character. Pulsation was not so well circumscribed. There was no doubt in our minds that the patient had ruptured the aneurysm which had been present many months prior to the accident.

Operation had been discussed with the patient and her family but it had not been urged until after the fall. We had felt previously that with her poor physi-

cal condition operation would, in all probability, result fatally, hence the postponement. Even with the aneurysm ruptured there was some hesitation on our part to operate.

The patient was treated expectantly with absolute rest in bed, heat to the injured hip and sedatives for pain. There was no improvement in her condition; swelling becoming worse and the pain no better. On October 22 patient was placed in the hospital and prepared for operation.

Operation. Under ether anesthesia the aneurysm was first attacked by making an incision over the center of the swollen mass and directly overlying the site of the original pulsation. It was made on a line extending from the posterior-superior iliac spine to the greater trochanter, was about four inches in length. This incision would expose the suprapiriformic space. When the skin and subcutaneous tissue had been opened the underlying gluteal muscles were found to be very ecchymotic. Incision was carried on through the muscles directly overlying the mass. When the muscles were completely separated, large masses of clotted blood were found lying directly beneath the muscle plane. These clots were cautiously and hastily removed, disclosing bright red blood which welled rapidly from the depth of the wound. The operator's hand was carefully placed into the well of seething blood and a hot laparotomy pad, previously made ready, was hastily packed into the depth of the wound, which, it had been determined, was a ruptured aneurysmal sac. The base of the sac extended well down against the greater sciatic foramen. This pad was tightly packed into the cavity of the wound and the second assistant instructed to hold firmly against the pack. Patient was hastily turned on the back with the second assistant holding the pack in the gluteal wound.

The abdomen was hastily opened in the left iliac region; intestines were packed away from the field with hot, moist laparotomy pads, following which the left hypogastric artery was segregated and a plain catgut suture passed underneath it. The ends of the ligature were clamped in a hemostatic forcep and the first assistant instructed to hold taut the ligature, using a finger to compress the artery against the ligature loop underneath. The patient was turned back to the right side and the operator again approached the aneurysm. The pack was removed, all remaining fragments of clotted blood cleansed from the sac. It was then found that the sac had originally been about the size of a large grapefruit. The entire or distal portion had been torn or blown, so to speak, from its proximal portion, thus leaving about two-thirds of the proximal part of the sac intact. The interior of the wall of the sac was smooth and not particularly fragile. It was found that the temporary suture on the hypogastric controlled perfectly the flow of blood. When the assistant was asked to relax his hold on the ligature, bright blood was seen to spurt from the base of aneurysmal sac underneath or at the level of the sciatic notch. The aneurysmal sac was obliterated by the Matas' obliterative endo-aneurysmorrhaphy technique. A No. 0 gastrointestinal suture on a half-curved,

swedged-on needle was used for the suturing. First suture was placed at the bottom of the sac in a purse-string fashion and tied securely. Coming on upward the suture was applied as a continuous one, running from side to side, placing the rows of sutures about one and one-half centimeters apart; in this manner the lower two-thirds of the sac was obliterated. The distal or fragmented portion of the sac was removed with scissors. An iodoform gauze pack was placed down to and against the surface of the obliterated sac. This drain was allowed to protrude from the central portion of the incision, which was closed in layers around the protruding pack. After the first two layers of obliterative sutures were inserted, the first assistant was asked to release the ligature on the hypogastric artery. Upon such release it was found that no blood exuded from the base of the original cavity. The assistant was then instructed to begin closure of the abdomen, which was done in the usual manner without drainage. By this procedure of closing both wounds at the same time, the operation was more hastily performed, thus eliminating as much shock to the patient as possible; the entire operation consumed about one hour and fifteen minutes.

The patient was placed in bed with hot water bags overlying the gluteal dressing. She was given the usual supportive treatment postoperatively consisting of glucose intravenously and occasionally an opiate for pain. The abdominal wound healed by primary intention; the gluteal wound healed firmly around the original site of the iodoform pack. The patient made an uneventful recovery insofar as the operation for aneurysm was concerned and left the hospital after a period of two and one-half weeks.

The wound at the site of the drain closed completely in about three weeks following departure from the hospital. In spite of the apparent recovery from the aneurysm operation, patient's general condition apparently had suffered considerable strain. Heart condition remained about the same until the first part of January, 1934, when it began failing. She developed edema of the feet and ankles, accompanied by other signs of cardiac decompensation. On January 12, 1934, patient suffered excruciating pain in her left subclavicular and shoulder regions. Within a period of two days the left arm and forearm became swollen with much discoloration involving the left axillary and upper arm areas. She expired January 19, 1934. The immediate cause of death being "complete thrombosis of the left axillary artery and acute cardiac decompensation."

In commenting on this case we would naturally wonder as to the etiology of the aneurysm. With a negative Kahn and no signs of syphilis otherwise, and the history of a fall several years prior to the rupture of the sac, it is reasonable to assume that this aneurysm was traumatic in origin and not syphilitic. If it were not traumatic in origin it might be assumed that the chronic cardiac valvular disease accompanied by her pelvic cellulitis were predisposing factors in

the etiology, as small vegetations or thrombi have been known to cause aneurysms.

As to the operative procedure—it is quite obvious that it is very necessary, when dealing with a gluteal aneurysm, that the hypogastric artery must first be temporarily ligated before complete closure or obliteration of the sac can be effected.

CYSTS OF THE MESENTERY

Review of the Literature and Report of a Case

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Cysts occur more rarely in the mesentery than in any other structure of the abdomen, so rarely indeed that standard text-books seldom more than mention them. The difficulties of differential diagnosis and the effects resulting from delayed intervention are sufficient cause for careful consideration of what was once considered one of the curiosities of surgical pathology.

These lesions were first described by Benevieni in 1507. Frazier¹ states that prior to 1850 mesenteric cysts were recognized only at necropsy, and between 1850 and 1880, though operations were occasionally performed for so-called mesenteric cysts, they usually followed incorrect diagnoses and terminated fatally. In an exhaustive thesis written in 1883, Collet stated that laparotomy for mesenteric cysts had never been performed prior to that time after a correct preoperative diagnosis. Douglas, in his "Surgical Diseases of The Abdomen," points out that Angageur in 1886 found only 19 cases reported. Porter² in 1905 stated "that in 15,000 autopsies at the University of Minnesota no mesenteric cysts were found; and in 200,000 clinical case reports at St. Lukes and St. Mary's hospital, Duluth, only 2 cases were observed." Alesen³ could find none reported at the Los Angeles General Hospital from 1912 to 1929. Warfield,⁴ who emphasizes that many surgeons of wide experience have neither operated nor observed a case, found 129 reported between 1920 and 1932. Two to three hundred case reports published prior to this time give a total of approximately 400 cases found in the entire medical literature since 1507.

Etiology and Classification. The etiology of these cysts is still obscure. Some believe them to be an erratic development of Meckel's diverticulum, while others maintain that they are due to dilatation of the mesenteric lymphatics with

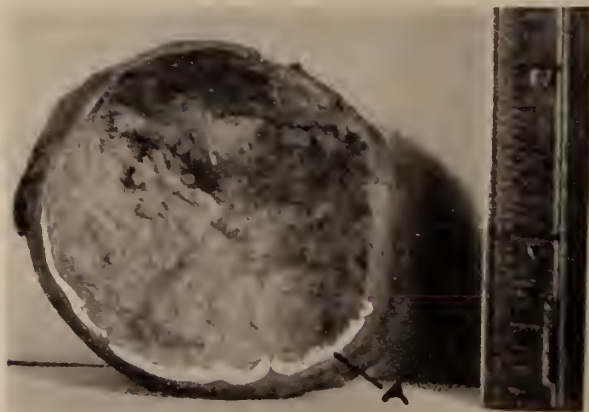


Fig. 1. (Left) Gross appearance of cyst on cut section. The thickened inner portion of the wall which contained sebaceous cells is shown at A.

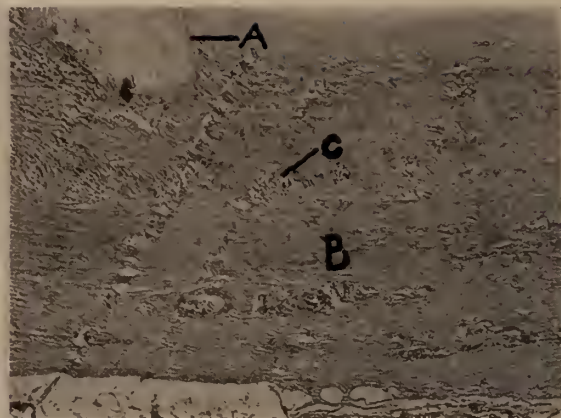


Fig. 2. (Right) Photomicrograph of cyst wall. A. Hair follicle. B. Outer fibrous portion of wall. C. Broken line of sebaceous cells at junction of inner and outer portions of cyst wall.

sequestration of the enteric canal. They are usually congenital and situated at the mesenteric attachment of the small bowel.

Moynihan,⁵ Braquehaye,⁶ and Porter⁷ consider them to have a multiple origin, while Dowd,⁸ Proust,⁹ and Niosi¹⁰ state definitely that they are embryonic in origin. Dowd substantiates this belief by tracing the embryology of the Wolffian body and the germinal epithelium, aberrant remnants of which may become separated and carried into the mesentery or mesocolon, there forming cysts. On this basis he made the following classification: 1. Embryonic; 2. Hydatid; 3. Cystic malignant disease. Among the embryonic type he places chylous and dermoid cysts which he says, "Originate as ovarian sequestrations." The hydatid cysts form a class by themselves and are caused by *taenia echinococcus*. He believes that sanguinous cysts are preformed into which hemorrhage has taken place.

Frazier¹ and Moynihan⁵ are of the opinion that they have a more varied origin and have classified them according to their physical nature:

"1. Serous cysts which are uni—or multilocular and contain a pale, clear, straw colored fluid. They arise from lymphatic dilatation or hemorrhage between the layers of the mesentery.

"2. Chylous cysts, either uni- or multilocular. These are the most numerous and contain a milky white fluid. They are caused by dilatation of lacteals or chyliferous vessels, or to an effusion of chyle into a pre-existing cyst.

"3. Hydatid cysts, which are in a class by themselves and are due to *taenia echinococcus*.

"4. Dermoid cysts, which are probably of ovarian embryonic origin and are more common in the female.

"5. Sanguinous cysts."

According to Parker,¹¹ Lewis and Thyng contend that many mesenteric cysts are of intestinal origin. From observation they have found that there is a regular occurrence of intestinal diverticula in the upper part of the small bowel in embryos of the pig, rabbit and man. Such diverticula growing down between the layers of the mesentery and then becoming sequestered might easily be the basis of mesenteric cyst.

Ewing¹² states that dermoid cysts of the mesentery are rare and may be located in any portion of the mesentery from the celiac axis to the pelvis. Fraenkel¹³ reported a case in which the cyst was adherent to the diaphragm. Dickinson¹⁴ found a large cyst in an infant two years old, extending in the mesentery from the ribs to the pelvis, and found it to contain connective tissue, fat, bone and cartilage. Bonfigli¹⁵ described a cyst which was adherent to the liver and the stomach containing nineteen loose teeth, two of which were embedded in well formed bone. The wall was lined with hairy skin.

Diagnosis. Because the symptomatology of mesenteric cysts is as protean as their histologic structure, diagnosis of these lesions is difficult. In sixteen cases tabulated by Collins and Berdez,¹⁶ mesenteric tumor was suggested in the diagnosis on only two occasions. The white blood count was above 10,000 in eight cases and over 20,000 in four cases. These cysts are more often found near the ileo-cecal valve; rarely in the mesentery of the jejunum. Of 129 cases reviewed by Warfield,⁴ only 14 were located in the jejunum. Their growth as a rule is rapid, though not uni-

form, and the rate of growth may be greatly accelerated by trauma or hemorrhage into the cyst. They are freely movable especially in a transverse direction. Hastings¹⁷ reported a case in which the tumor was movable in a plane from the right hypochondrium to the left iliac fossa. Symptoms manifest themselves usually in the form of digestive disturbances with varying degree of pain suggestive of acute and chronic intestinal obstruction. As the cyst increases in size pressure is exerted on neighboring viscera causing increased pain, flatulence, obstinate constipation, and finally actual obstruction. The patient may find relief by turning and lying in certain positions, a point mentioned by Freudenthal.¹⁸ There is usually loss of weight and emaciation. In some instances the manifestations of intestinal obstruction may be so frank as to make any other diagnosis impossible. Age is not a significant factor, cases having been reported in ages varying from 11 weeks to 80 years. Ney and Wilkinson¹⁹ state that puny physical development seems to be a general characteristic.

Parker¹¹ believes that x-ray examination is usually of but little assistance due to the fact that the cyst contents do not cast a shadow differentiating the growth from the surrounding structures. A barium enema, however, may rule out colon involvement, and the work of Joyce²⁰ showed that screening of the stomach may reveal a pressure defect.

Differential diagnosis must include floating kidney, renal sarcoma, hydronephrosis, encysted tuberculous peritonitis, hydrops of the gall bladder, ovarian cyst, pyosalpinx, extrauterine pregnancy, pedunculated uterine neoplasms, retroperitoneal tumors, pancreatic cyst, intestinal new growths, appendicitis, cholecystitis, intussusception and perforated peptic ulcer.

CASE REPORT

Miss A. B. K., aged 24, a store clerk, was admitted to the hospital October 23, 1937, and presented the following history: Six years ago she received a back injury in an auto accident. She has had constant backache since that time which has become progressively worse during the past year. Six months ago she began to have intermittent attacks of colicky pain under the right costal margin, which during the past week was referred to the interscapular region. There was excessive flatulence immediately after eating but no nausea or vomiting; no diarrhea or constipation. She had lost 10 pounds in the past three weeks. About nine months ago she noticed a hard lump just under the lower right ribs which shifted to different positions and at times would completely disappear. This mass

has consistently grown in size until at the present time it is about that of a small orange. Its mobility has persisted. At times it has spontaneously disappeared for a period of two or three days. The menstrual history was normal. No history of jaundice could be obtained. The past history was negative other than the above injury. One sister died of carcinoma of the breast.

Physical examination revealed the patient to have a poor general development with subnormal tissue turgor. Temp. 98.6. Pulse 78 and regular. Blood pressure, systolic 110; diastolic 75. Hemoglobin 85%. Leucocyte count 10,500. There was slight tenderness in the right upper quadrant of the abdomen. Just below the right costal margin a resistant, spherical mass could be definitely palpated and which was easily displaced downward into the right pelvis or across the midline to the left kidney region. However its normal habitat seemed to be in the right kidney fossa where it would never fail to spontaneously disappear when the patient gave just the right peculiar twist. Urinalysis showed a trace of albumin with a few hyaline casts. The blood Wassermann and tuberculous fixation tests were negative. Intravenous pyelogram showed the right ureter to be questionably visualized. There was a well defined mass, somewhat spherical in shape, about the size of the right kidney which was apparently behind and medial to the ureter, as a result of which the kidney appeared to be rotated. The x-ray also revealed an old healed fracture of the body of the third lumbar vertebra.

A right rectus abdominal incision was made with its midpoint opposite the umbilicus. A cyst was found lying in the anterior layer of the mesentery of the jejunum. It was completely covered with peritoneum and attached to a broad, flat pedicle immediately to the left of the spine. The tumor was excised and the patient made an uneventful recovery.

Gross examination revealed an elliptical mass measuring 6 by 5 by 7 cm. with a fairly smooth, gray surface. It had a doughy resistance. The entire cyst weighed 83 grams. The cyst wall measured from 2 to 6 millimeters in thickness and presented ridges on the inner surface where the wall was thickest. Close examination of the cut edges of the wall revealed a sharp line of demarcation between the inner cream colored portion and the outer, more resistant, translucent portion. The contents of the cyst were at first quite soft and of a light yellow color and greasy consistency. After formalin fixation the contents turned nearly white with about the consistency of cottage cheese. Chemical examination revealed no cholesterol and smears of this material showed no recognizable cells.

Microscopically the wall consisted mostly of connective tissue with no distinct lining cells, although the inner half of the wall showed much cellular debris. At the junction of the inner and outer portions of the wall was a broken line of cells of the same morphology and staining reactions as sebaceous cells. These cells stained poorly with hematoxylin and eosin but stained red with Scharlach R along with the inner portion of the wall. The outer distinctly fibrous portion of the wall did not stain with Scharlach R.

COMMENT

1. The rarity of these lesions is evidenced by the fact that only approximately 400 cases have been reported in all medical literature since 1507.

2. Preoperative diagnosis of mesenteric cysts is made extremely difficult by their multiple and varied symptomatology.

3. Differences of opinion in regard to classification of these cysts is due to their obscure etiology. Some believe them to have a multiple origin and therefore have classified them according to their physical properties, while other authorities state definitely that they are embryonic in origin and have classified them on this basis. Careful consideration of our case report would favor the latter classification. At operation a broad, flat pedicle was found to attach this tumor to the left side of the spine. This suggests the original location next to the spine which position further suggests the possible embryonic ectodermal origin of this cyst as a part of the lateral cell mass.

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PULMONARY CHANGES IN RHEUMATIC FEVER

PERRY J. MELNICK, M. D., Ph.D.

DECATUR, ILL.

Introduction. Internists occasionally encounter cases of rheumatic fever in which migratory areas of consolidation in the lung fields appear suddenly, last a variable length of time, disappear as quickly and unexpectedly as they appear, and produce no change in the clinical picture and no variations in the pulse or respiratory rate. Howard¹ in a recent historical review of the subject of the "Rheumatic Lung" states that these facts have been known for about two hundred years. Clinicians of the 19th century did not hesitate to speak of "rheumatic pneumonia." Howard quotes statistics from this period in which up to 58% of cases of rheumatic fever were thought to be associated with pneumonia.

Read before Section on Medicine, and Illinois State Medical Society, Peoria, May 19, 1937.

The nature of this pulmonary lesion has been obscure because patients rarely die during an acute attack of rheumatic fever, and comparatively few autopsies have been performed on these cases. Some of the older clinicians (Garrod,² Besnier,³ Coombs,⁴) questioned whether the lung findings were due to a specific rheumatic

fever (Postmortems 435, 448, 601, 625, 634, and 738 of 1934). The age of the patients varied from 12 to 37 years. Three were males and three females; four white and two colored. They all complained of joint pains, fever and dyspnea and palpitation. The physical findings were sufficiently clear so that a correct clinical diagnosis of acute rheumatic fever could be made. Three cases were 12 year old children who died during their first attack. The autopsy findings in all the cases were those of acute rheumatic fever, with verrucous eruptions on one or more valves, and Aschoff nodules in the myocardium. In 4 cases there was no fibroplastic deformity of the heart valves.

The lungs in all the cases had a characteristic gross appearance. They have a boggy or rubbery consistency, yet the cut surfaces are dry; that is, there is no fluid in the air sacs. In addition, in three cases the cut surfaces revealed wide bands which were deeper red and firmer, having the consistency of spleen tissue, i.e., focal areas of "splenization." (Figure 1.)

Portions from all five lobes of the lungs were fixed in Zenker's solution and in formalin, and paraffin sections were stained by the following methods: hematoxylin and eosin, van Gieson, Mallory's phosphotungstic acid—hematoxylin,

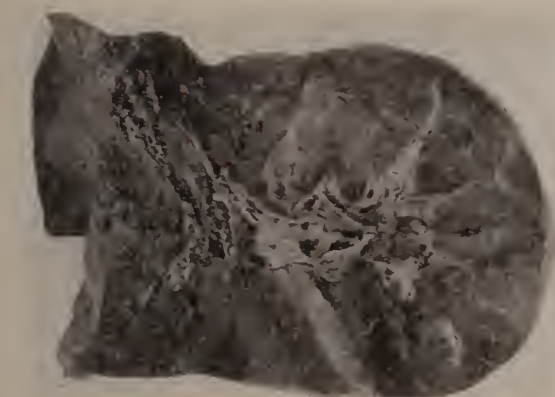


Fig. 1. Sectioned surface of a rheumatic lung showing focal areas of splenization." (P. M. 435, 1934).

pneumonia. Only during the past 10 or 15 years have serious attempts been made to study the lesion. Klinge⁵ and Rabinowitz⁶ studied several autopsies; Paul,⁷ 30 autopsies; Naish,⁸ six autopsies; Coburn,⁹ 30 autopsies; and Eiman and Gouley,¹⁰ nine autopsies. This list includes all the available published autopsies of these cases.

In some cases these authors found only a simple pneumococcic pneumonia. In the majority, however, a type of change was seen which can be characterized essentially as a vascular reaction. When one analyzes their reports and reconciles the differences due to variations in the degree of severity and the stage of the process, a characteristic picture is seen in these lungs. This same picture was found in the cases which form the subject of this study.

There is fair agreement among the various authors as to the character of the process seen in these lungs. There is disagreement, however, as to its nature, whether specific or non-specific. An experienced pathologist can usually recognize the lung picture as being fairly characteristic. Are we justified, however, in concluding that it is a specific rheumatic process? This question motivated the present study.

Summary of Findings. At the Cook County Hospital the author had the opportunity of studying six autopsies of cases of acute rheuma-

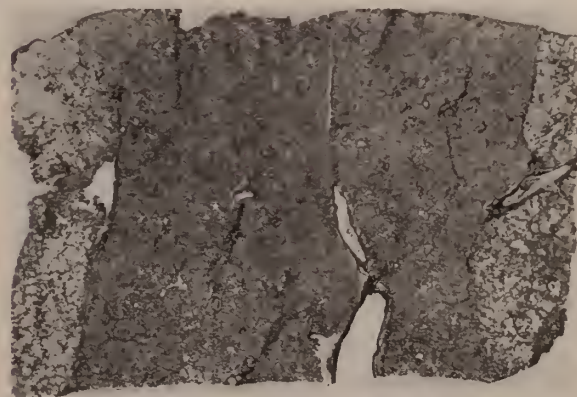


Fig. 2. Low power view of a focal area of splenization (H. and E. x 5). The walls of the air sacs are very much thickened, and their lumens are fairly empty.

elastic tissue stain, and Gram-Weight stain for bacteria.

In all the cases the essential microscopic findings were those of an intense hyperemia, and a proliferation of the septal cells. The alveolar walls are greatly thickened up to 10 or more times the normal. The capillaries in the alveolar

walls show an extreme dilatation, often bulging into the alveolar spaces. In addition, there is an increased cellularity of the alveolar wall. These cells are the large mononuclear phagocytic cells located in the adventitia of the smallest blood vessels, which also form the lining of the air sacs. In these lungs the adventitial cells are greatly increased in number and are swollen.

The process is seen especially intensified in the focal areas of splenization found in three of the cases (Figures 2 and 3). Furthermore, in these areas of splenization the smallest branches of the pulmonary artery show changes which, although not striking, may be significant. The endothelium of these vessels is much swollen, cuboidal and even columnar in shape, and vacuolated (Figure 4). Rarely, even small areas of beginning thrombosis are seen originating from this injured endothelium. No bacteria can be found in any of these lungs except in one case complicated by a confluent bronchopneumonia.

Discussion. The process seen in these lungs is that of a vascular reaction of great intensity, backed up by a cellular proliferation. In the areas of greatest intensity the endothelium of the smaller blood vessels is injured. The pathogenesis is not passive congestion due to myocardial weakness or valvular deformities, because the

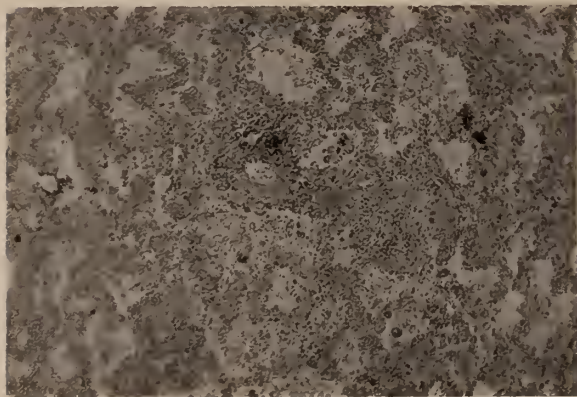


Fig. 3. Medium power view of a field from Fig. 2 (H. and E. x 100). The thickening of the walls of the air sacs is due to marked hyperemia, and to proliferation of the septal cells.

process is chiefly focal. It is not a simple inflammatory reaction because there are no bacteria and no necrosis.

One cannot help but conclude that the process resembles an allergic reaction. One has the impression that the blood vessel endothelium, backed up by the adventitial cells, is forming a

barrier against some toxic agent, trying to fix it (perhaps in a kind of antigen-antibody reaction), and is becoming damaged in the process.

The concept that rheumatism has certain allergic aspects has recently come into greater prominence. At the congress of the International League Against Rheumatism¹¹ held in Stockholm

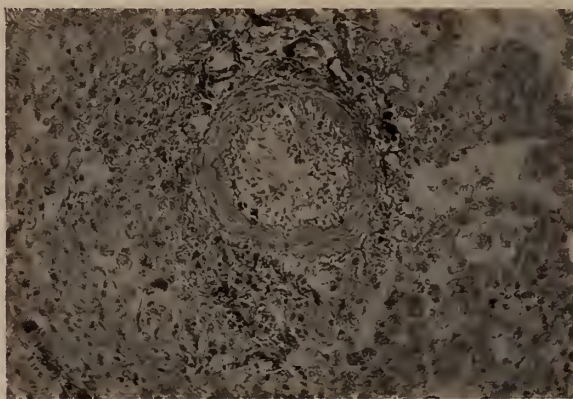


Fig. 4. High power view of a field in Fig. 3 (H. and E. x 350), showing a small branch of a pulmonary artery with swelling and vacuolization of the endothelium.

in 1936 this concept dominated the discussions. Opie¹² has recently summed up this problem, and Swift¹³ in a review on the nature of rheumatic fever states that the possible relationships between hyperergy and rheumatism have not been fully explored. The pathologic anatomists have been slow to follow the lead of clinicians in this field because it is fundamentally not a morphologic problem but a physiologic one. However, careful examination of finer changes in material such as is presented here may justify some conclusions.

The histologic criterion of allergic inflammation that has been accepted is that of a characteristic granuloma, composed of an area of loosening and fibrinoid necrosis of the collagenous ground substance, accompanied by a proliferation of large mononuclear cells. Pagel¹⁴ has recently summed up this concept of the specific granuloma of allergic inflammation.

This specific granuloma is always found in relation to a blood vessel. The role of the blood vessels in allergic inflammation is of fundamental importance. Rössle,¹⁵ in many papers, has emphasized this point of view, and his work is substantiated by Klinge⁵ and his associates, Pappenheimer and von Glahn,¹⁶ Pagel,¹⁴ and many others. The blood vessel endothelium is in a position to arrest an antigen. The histologic evi-

dence of this activity has been found by Rössle, Klinge and the others mentioned above, in a swelling, proliferation and other changes in the endothelium; later changes in the wall of the vessel; and later in the adventitia. Thus the specific granuloma is formed. It is conceivable that in retrospect it should not be difficult to find the early endothelial changes without fully formed granulomas, such as is seen in these lungs.

In rheumatism, the Aschoff nodule in the myocardium is probably an allergic granuloma, according to Klinge and others. Similar rheumatic nodules have been found in almost every organ in the body. Such nodules have been found in the adventitia of the larger branches of the pulmonary artery by many (Paul,⁷ Chiari,¹⁷ Brecht,¹⁸ Klinge,⁵ Pappenheimer and von Glahn.¹⁶ In the lung parenchyma itself, however, only one author, Fraser,¹⁹ claims to have found Aschoff nodules. This is doubted by Klinge and his associates, who have performed extensive researches on the histologic changes in rheumatism. In the lung they have found no specific granulomas. Their findings in the lung resemble closely the findings reported here. Klinge mentions the difficulty in differentiating passive congestion from the vascular reaction seen in the rheumatic lung, and points out that the latter picture is not seen in any other disease. We are justified, therefore, in concluding that the process seen in the lungs in acute rheumatic fever is probably one of the hyperergic mechanisms which occur in this disease.

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DISCUSSION

Dr. Leon Unger, Chicago: Dr. Melnick has given us a very able and clear-cut picture of what occurs in the lungs in rheumatic fever. He has shown us that the picture is that of a marked increase in permeability of the capillaries without the presence of an obvious irritant and without any signs of passive congestion. The findings suggest that the condition is due to an allergic response to the bacteria that cause rheumatic fever.

The word "allergy" in its broad sense means any type of altered reactivity resulting from the action of any irritant, whether such irritant contains protein or not. There may be an increased reaction to this irritant; that we call "hyperergic"; a decreased reaction is called "hypo-ergic"; if the tissues cannot respond at all to the stimulus the lack of reaction is called "anergic." "Hypersensitiveness" is, therefore, synonymous with "hyperergic."

But in the narrow sense in which the term "allergy" has come to be applied rheumatic fever, of course, does not belong. It is *not* a member of that group of conditions due to hypersensitivity which includes hay fever, bronchial asthma, allergic rhinitis, food allergy and others. The patient with hay fever or asthma, for example, is apt to have some other allergic manifestation, such as urticaria, migraine or eczema; in his family a large percentage will be allergic; his blood, sputum and nasal secretion usually show an increased number of eosinophils; epinephrin or ephedrin usually help him; and, finally, skin tests are apt to be positive to one or more protein-containing substances, such as pollen, horse dander, egg or house dust, to mention a few. None of these characteristics are found in rheumatic fever.

Pathologically, however, there is some resemblance between the picture in rheumatic fever and that in asthma, hay fever, etc., for both show an increased capillary permeability with resultant edema. Hay fever is associated with edema of the nose and eyes; asthma with edema of the lower air passageways; urticaria and angioneurotic edema with localized edemas; gastrointestinal allergy is also probably associated with a localized edema. Recently Goltman has shown conclusively that typical migraine is characterized by edema of the brain. Because of a mistake in diagnosis a patient with periodic headaches was trephined and explored for brain tumor. The edema was marked but no tumor was found; incidentally, the patient has been relieved of her headaches by the removal of wheat from the diet. We say, therefore, that both rheumatic fever and those other conditions which we usually call

allergic are characterized by increased capillary permeability and by localized edema.

Swift and Kinsella state that "the so-called allergic theory does not absolutely establish the etiologic rôle of streptococci in rheumatic fever but only furnishes us with the best explanation of how the different strains of streptococci could all induce a similar clinical and microscopic picture. This theory fits in very well with what we have known for a long time in hay fever and bronchial asthma. For example, the patient with hay fever due to the pollen of ragweeds does not in the least differ in his symptoms from the one in whom grass pollen causes the trouble; one patient may be just as sick as the other; the local findings of conjunctivitis and rhinitis are identical. Only the season of the year differs. In asthmatics, likewise, the symptoms, the physical findings and even the post-mortem findings may be identical no matter what causes the asthma. If the symptoms are due to dog hair or to egg or to pollen or to cottonseed they will not differ from one another. Each will cause edema of the lumina and walls of the bronchi and bronchioles and this, in turn will lead to the clinical symptoms of cough, dyspnea, orthopnea and wheezing.

Various strains of streptococci have been accused of causing rheumatic fever; not one has been accepted. May not any or all strains be responsible because of a common factor in all? By analogy we have good grounds for such a theory. We know that horse dander and horse serum have a common something; that cotton-seed and kapok also are very closely related so that when a patient is hypersensitive to one he usually is hypersensitive to the other; giant and short ragweed pollen are also very closely associated; in fact, some believe the pollen of these two weeds to be identical since the tolerance for one by injection is equal to that of the other; but we know that they are not identical because they differ sharply when we make contact tests in certain cases of contact dermatitis. Lately, too, we have come to realize that certain foods have a good deal in common; for example, if a person has an idiosyncrasy to cauliflower he is also, in most cases, hypersensitive to broccoli and Brussels sprouts; buckwheat and rhubarb, asparagus and onions are related; and the citrus fruits are also closely associated from an allergic point of view.

Coburn has suggested the term "the rheumatic state" to describe the plight of the unfortunate individual who is sensitized or conditioned by a streptococcic infection to a point where he responds to further absorption of products of streptococci actively by the constitutional and tissue reaction which we call "rheumatic fever." This "rheumatic state" or condition of susceptibility may be permanent.

I might at this point sound one warning. If the allergic theory in rheumatic fever should be accepted, it should not lead to a lessening of our efforts to find a particular organism or strain which may be the exciting factor. For, if a specific antibody could be made to combat a specific bacterium, the results of treatment would undoubtedly be much superior to that based on attempts to reduce hypersensitivity. As a matter of fact, in all the so-called group of bacterial

allergies our clinical results by injections of vaccines and filtrates, both stock and autogenous, have been far inferior to the results which we obtain by treatment of those patients who are hypersensitive to such substances as horse dander, orris root and pollen. By analogy, therefore, we need not expect any wonderful results if we attempt to hyposensitize our patients who suffer from rheumatic fever or the "rheumatic state" of Coburn.

THE PROBLEM OF RHEUMATISM

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CHICAGO

Untiring forces have waged a relentless war against the ravages of tuberculosis, cancer and heart disease; even now, the campaign against syphilis is reaching peak momentum; yet chronic rheumatism, which has a morbidity greater than any three of these diseases combined, has been regarded until recently with indifference by medical and social agencies. "As Copeman stated the position of tuberculosis 50 years ago was similar to that of the far more costly, but less dramatic, rheumatic disease today. Tuberculosis has been conquered largely by teamwork between far-seeing laymen and physicians who are determined to rid humanity of such domination. The same result can be achieved in the case of 'rheumatism, the Captain of Crippledom.'" (Hench et al¹).

According to Hench,¹ whom I shall quote freely in the text of this article, chronic arthritis, the most common form of rheumatism, is the greatest single cause of disability in temperate climates. While its mortality is very low, it nevertheless produces more pensionable invalidism than any other condition except cardiovascular disease in old age.

In recent years the social and economic problem of arthritis has come more to the fore, especially in Europe, where the "Ligue Internationale Contre le Rheumatisme" was organized in 1924 as a step toward combating the continued indifference of the medical profession. Subsequently, affiliated committees were organized in various countries and more searching studies made, especially in England, Germany, Sweden and Russia. In 1928, Dr. Louis B. Wilson of the Mayo Foundation organized the American Committee for the Control of Rheumatism. This group furnished the impetus necessary to foster public recognition of the menace of arthritis. As a result of their efforts interest in the problem

has become widespread; statistical analyses, experimental investigations and clinical reports have been integrated and correlated by this Committee. Its task has been, and is still, a tremendous undertaking. At last, however, concrete facts are now coming to light, the problem is assuming a definite expression and plans for the control of rheumatism have been outlined. Despite the painstaking efforts of the American Committee to analyze the needs of the problem and formulate a pertinent, effective campaign for its control, no active measures have been adopted by proper public authorities (lay, civic or legislative) to bring to fruition the recommendations advocated.

Incidence of rheumatism. Chronic arthritis is the oldest recorded disease and is universally distributed. The British statistics involve a comprehensive record of the illnesses of one year of 91,000 insured persons (58,000 males; 33,000 females). During the year 3% of the men and 2.2% of the women consulted their physicians for rheumatism. On the basis of these figures the estimated cost in 1927 in sick benefits for rheumatism ran between \$85,000,000 and \$100,000,000. The disease produces one-sixth of industrial invalidism. In Germany, rheumatic joint disease showed 8.2 times as many cases as all kinds of tuberculosis, 3.4 times as many days' illness, 1.4 times as much invalidism. In Sweden 20% of the invalid cases under 60 years of age were due to arthritis. Arthritis imposes upon the Swedish pension Board an economic burden more than twice as heavy as that arising from tuberculosis. More than 12% of its funds are used for chronic articular rheumatism. In Sweden 0.6% of the total population are disabled by arthritis at a cost of \$1,500,000 a year to the state. Denischevsky estimated that about 4% of all Russian workers become incapacitated from rheumatism with an average yearly loss of 48 days' work.

The most comprehensive statistics in the United States are those of Dublin,² who analyzed the surveys of the United States Public Health Service and the Metropolitan Life Insurance Company. The death rate from chronic rheumatism and rheumatic fever was only about 4 per 100,000 persons, an insignificant portion of the annual death. On the other hand, the morbidity is strikingly high. The latest morbidity

study of value was conducted by the Committee on the Cost of Medical Care,³ covering the incidence of illness in 9,000 families in eighteen states, visited periodically for twelve months during 1928 to 1931. This investigation of rheumatism, both acute and chronic, showed an annual case rate in the population survey of 11.4 per 1000. Since the group surveyed was relatively young, the rates for all ages had to be adjusted to the age distribution of the white population of the 18 registration states, with a resultant case rate of 14.54 per 1,000. These figures exclude muscular rheumatism, lumbago and the like.

In all communities surveyed rheumatism was one of the outstanding causes of disability. The Metropolitan Life Insurance Company's figures concerning 600,000 persons showed that 16.44% were reported as suffering from rheumatism. This illness accounted for nearly 9% of all cases of disease. It was outranked only by accidents which accounted for 14% of disability; tuberculosis counted for less than half as much; heart disease and cerebral hemorrhage only two-fifths and cancer less than one-tenth as much.

The United States Public Health Service survey³ of Hagerstown, Maryland, indicated an annual rate of sickness due to articular rheumatism and gout of 16.6 per 1,000; muscular rheumatism, lumbago and associated conditions increased the incidence to 19.6 per 1000. The 1935 report of the Health Service shows that disability from rheumatism, acute and chronic, lasting eight calendar days or longer amounted to 5.9 per 1,000. The rate for all diseases in the rheumatic group was 8.8 per 1,000. For all disability combined, including non-industrial injuries, the rate in 1935 was 83.7 per 1,000. Thus rheumatism was responsible for over 9% of all disability.

The Cost of Rheumatism. Translating these figures in terms of monetary values, it was estimated that in 1932 rheumatic disease caused an annual loss of 7,500,000 weeks of work at a cost of more than \$200,000,000 to those disabled. In 1931, about 35,000 ex-service men received over \$10,000,000 in disability compensation for arthritis. These figures, tremendous as they seem, are certainly not exaggerated; if anything they are too conservative. This statement is borne out by the survey of chronic diseases in Massachusetts, where nearly 12% of the total population was suffering from some type of chronic

disease; rheumatism accounted for 3.2% of the 4,380,000 population's illness at a cost of \$20,000,000. Small wonder that rheumatism has just been designated, "Public Enemy Number Ten," by the United States Department of Public Health.

In addition to the loss in wages which the rheumatic group engenders, the arthritic worker must be regarded as an industrial hazard and liability. A number of factors are considered contributory. In the first place, the arthritic worker is not a normal person. Because of rheumatic involvement of one or more joints or of the spine, his movements become guarded, awkward and inefficient. The distraction of discomfort or actual pain and fatigue makes him an easy victim to minor accidents. Secondly, minor injuries, which might have no effect on the normal individual might lead to real disability in the susceptible arthritic, in whom the pre-existing rheumatic condition is easily activated. Thirdly, disabilities complicated by arthritis resist therapy more stubbornly than the uncomplicated cases and consequently require a far longer period of treatment and convalescence.

The extent to which sufferers from rheumatic disease are disabled for work appears from the Metropolitan surveys of 1915 to 1917. Only 12.4% of these persons were at work; the rest were unable to work, although not all of them were confined to bed. These illnesses, moreover, were of long duration. In two localities 35.4% of the rheumatic patients had suffered from the disease three years or more. This figure is more than twice the 17.4% of all illnesses combined which lasted for this length of time.

What Conditions Affect the Rheumatic Worker? Sex. In sickness surveys of the Metropolitan Life Insurance Company, the female rate was one and one-half times that for males; in the Hagerstown study, twice as high. This tendency was borne out by a survey of disability in rural New York.

Age. Age is an important factor in the incidence of the illnesses, particularly those due to the chronic forms. In the Metropolitan surveys only 0.2 persons per 1,000 were ill with rheumatic diseases under 15 years of age; but this rose to 0.9 between the ages of 15 to 35; 3.1 at ages 35 to 54; and to 11.0 at ages 55 and over. Cushway and Maier,⁴ in routine roentgen examinations of workers before employment, found

osteo-arthritic changes, all ages considered, of about 6.3%. Seventy-five per cent of industrial workers over 40 suffer from some type of rheumatism. Thus, a man over 40 years of age is a considerable liability both to his employer and to his insurance company. Thomson⁵ found arthritis present in 19% of 500 cases of industrial accidents. In 49% of these cases the arthritis began with or was aggravated by an occupational or causal injury. One-half became compensation cases.

Occupation. Generally speaking, morbidity rates from rheumatism are highest in industries and occupations where the individual is exposed to extremes of heat or cold, or to dampness. The sheltered occupations show uniformly low rates. Tempelaar and Van Breeman (1931) found that of 3,000 patients, those with outdoor employment had 3 to 5 times as much rheumatism of various types as indoor workers. Of 1,931 men seen at Bath affected with rheumatism, two-thirds were engaged in open air occupations. The disease is especially prevalent in occupations entailing exposure to heat (metal workers, bakers, furnace stokers), to dampness (dyeing and textile workers, miners, refrigerator workers, bath attendants, fishermen, launderers), and to extremes of weather (carpenters, farmers, laborers, postmen, locomotive engineers, chauffeurs, conductors, forestry workers, ship builders). Miners seem particularly liable to fibrositis; 71% of 452 miners were treated for this complaint as compared to 45% of 1,044 persons of other occupations (Buckley⁶).

Climate. It is generally accepted that climate is not the prime cause of rheumatism, but it does have an effect on persons subject to rheumatism.

Control of Arthritis. The control of arthritis must be considered from two viewpoints, industrial and public health. The industrial side also has a social aspect. It implies the improvement of working conditions so as to minimize the factors predisposing to aggravation of arthritis in susceptible persons. By way of illustration, miners should wear light working clothes to permit aeration and minimize stagnant sweat. Before facing changes in temperature outside the mine, they should bathe at the mine head and change to warm, dry clothing. Workers in cold places should be provided with insulated clothes, especially boots and leather pads, warm canteens, hot food and hot foot-baths. For those exposed

to wet, waterproof clothing, warm boots and warm dressing rooms are essential. The joints and muscles of workers using pressure drills should be protected by shock insulators, leather pads or other devices. There should be pauses from fatiguing work. In addition, provision for dry offices and houses, adequate sunshine, proper hours for food and rest and reduction of avoidable mental and physical strain are advocated. Social workers can do much to investigate, correct and control such phases of the problem.

The acceptance of the control of rheumatism as a public health function is the most important measure in solving the problem. In order to treat individuals intelligently, to rehabilitate them and restore their wage-earning capacities, certain standards must be formulated. Such standards must have the stamp of authority, the seal of trustworthy procedure. To develop such standards, centers must be established for the study, treatment and control of rheumatism. These rheumatism units must be designed and equipped to permit of careful observations, necessary research work and competent therapy. From such data, adequately analyzed and statistically compiled, concrete conclusions may be drawn to further reduce the economic and humanitarian inroads of rheumatism.

The industrial or insurance physician is handicapped in his efforts to return a patient rapidly to industry. The avoidance of progressive deformity and disability usually necessitate more special care than the physician can provide for the patient confined to his home. Furthermore, the honest worker prefers recovery of his wage earning powers to the acceptance of an inadequate pension. Therefore, when rheumatic centers are being established it is imperative that they be made available to the indigent worker whose dole covers but little more than his maintenance and does not provide for prolonged treatment. When therapy can be started early, great disability may be prevented. The administration of physical therapy in the evening may keep a worker performing his duties by day.

In Russia, where workers claiming disability from rheumatism are sent to the state spas, the disability from arthritis and the days' lost work have been reduced materially. The present-day advances in all forms of physical therapy have added powerful weapons to the physician's armamentarium in combatting rheumatism.

Vaccinotherapy and medical management are likewise indicated in certain cases. Surgery is playing an increasingly active and important role in restoration of function. The pessimism which regarded rheumatism as a hopeless ailment must be dispelled. The disease can be prevented and controlled, but conscious, concentrated action must be taken by those agencies which guide the destiny of modern medical welfare.

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THE IMPORTANCE OF PRE-EMPLOYMENT AND PERIODICAL MEDICAL EXAMINATIONS

Summary of Medical Findings in 500 cases.

ROBERT C. PAGE, M.D.

CHICAGO

The revision of the occupational disease law in the State of Illinois has done much for the general welfare for all parties concerned. The employer, becoming aware of possible occupational disease exposures existing in his plant, is following modern engineering methods, as a means of control. Likewise, he is realizing the importance of having robust and healthy men in his employ. In relation to occupational disease, he does not wish to assume unnecessary liability by employing a man already suffering from a known occupational or disabling disease. In order to prevent such occurrences as well as to obtain the highest degree of work efficiency, all prospective employees should receive pre-em-

Paper read before the August meeting of the Greater Chicago Safety Council, held at the Palmer House, Chicago, Illinois, August 19, 1937.

*J. B. Harney, M. D., Roentgenologist, Chicago, Illinois.

ployment medical examinations whether they are to be exposed to a hazardous environment or not. The benefits to be derived from such a program I shall exemplify later. One outstanding feature is that it reaches a group of the population who under other circumstances would not receive a medical examination whether it be from a personal or financial reason.

To briefly exemplify my previous statement relating to the benefits that may be derived from the routine examination of all employees, I have prepared Table 1 on which are summarized the results of five hundred complete medical examinations. All men received the same type of an examination which included a previous occupational and medical history, a complete physical examination (x-ray of chest included as well as laboratory work in the nature of urinalysis, hemoglobin determination, and Wassermann and Kahn test for syphilis). As these examinations were made by myself and all of the films read in conjunction with one roentgenologist,* the conclusions derived are the results of one system of thought.

In this study the following industries are represented: foundries, both iron and brass, battery and printing plants, tool shops, novelty makers, bicycle works and glass manufacturers, and as such furnishes a bird's eye picture of the medical status of employees of many of our smaller manufacturing establishments throughout the city.

The study includes:

(a) One hundred men between the ages of 17 and 35 who received pre-employment examination, and who at the time of this examination denied previous occupational disease exposure.

(b) One hundred men between the ages of 35 and 73 who during their whole life according to occupational history records had never been subjected to a hazardous exposure.

(c) Three hundred men who during their working life have been exposed to an occupational disease hazard—dust for the most part with lead in specific instances. This group includes 100 foundrymen, 20 sandblasters, 30 battery plant employees and 150 men who follow such trades as polishing, buffing, grinding, asbestos workers, etc. Nearly all nationalities are represented.

Let us first consider the 100 new employees with an age range from 17 to 35; of these men 96 are American born, 3 are Germans, and there is one Austrian. Twenty-five per cent of this

group are apprentices for polishing, buffing or grinding; 8% are punch press operators, the remaining group includes such occupations as tool and die makers, lathe workers, machinists, welders, assemblers, tool clerks, inspectors, time keepers, etc. No unhealthy chests were detected in this entire group. The physical status was regarded as excellent in 81 cases, average in 17 cases, two men were rejected on account of bilateral inguinal herniae. Other physical defects recorded were: poor teeth 9 instances, impaired vision in three cases, hypertension one instance and trace of albumin in the urine in two instances. This group illustrates the type of an individual from a physical standpoint that is chosen by an employment man as a prospective employee. Six manufacturing establishments are represented in this group.

Let us now visualize the possible physical status of these men 15 to 25 or even 35 years from now. No protective measures or better working conditions are needed in this instance as these men are not subjected to an occupational disease exposure. I now refer to the 100 men examined between the ages of 35 and 73 who according to their occupational histories have never been exposed to an occupational disease hazard. Twenty per cent are tool and die makers, 13% are machinists, the remaining group includes clerks, assemblers, maintenance men, punch press operators, engineers, millers, sheet metal workers, inspectors, janitors, blacksmiths, salesmen, laborers and wood workers. Of this group 50% are American born, 20% are Germans, 7% are Polish, the remainder have emigrated from the other European and Asiatic countries.

With each decade the physical fitness is lessened with a corresponding increase in the physical and systemic defects: between the ages of 36 to 45 years, 43.6% of the men employed are considered to be in excellent physical condition, 54% are classified as average, 2.4% are below average, as compared to 24.2% graded as excellent, 69.9% classified as average and 5.9% as below average in the age group of 46 to 55 years. From 55 to 73 years a study which included 12 employees, 8.3% are classified as excellent and 91.7% as average. The cause of this fall in physical fitness is explained by the increase in physical defects, many of which could be either pre-

vented or treated if medical attention is sought in time. I now refer to eye conditions, particularly in the nature of poor vision, where there is a percentage incident of 10.9% in the 36 to 45 age group, 24.2% in the 46 to 55 age group, and 8.3% in the 55 to 73 age group. Oral hygiene is generally very poor. Dental attention was needed in 21.9% of cases in age group of 36 to 45, 30.3% in age group of 46 to 55 years, and 41.5% in group aged between 55 and 73 years. Other physical and systemic defects in the nature of high blood pressure, herniae, varicosities, syphilis, diabetes, kidney disturbances, etc., which help to account for the change in physical rating will be discussed in more detail later. As you will note, lung conditions play practically no role in this group.

The group of 300 employees who have been exposed to hazardous occupations for varying periods during their working lifetime, for purposes of discussion will be considered collectively with special reference given to any unusual feature in any one group whether it be sandblasters, foundrymen, or polishers. In the age group from 17 to 35 years, 58.5% are classified as excellent, 38.7% as average and 2.5% as below average, while between the ages of 36 to 45 years, 17.6% are classified as excellent, 76.4% as average, 4.8% below average, and 1.2% questionable. From the age of 46 to 55 years, 5.2% are graded as excellent, 75% as average, 18.6% below average and 1.2% as unfit for continued employment. Twenty-eight employees make up the 56 to 70 year old group, of which 7.2% are classified as excellent considering their age, 50.4% as average, and 42.4% as below average.

The incidence of chest pathology is not great even in this group. No disabling cases of silicosis were detected. Minimal degree fibrosis, first degree fibrosis, etc., denote only stages of silicosis and in no way disable the individual from continued employment. Four cases of tuberculosis were diagnosed, one of which was active with a minimal degree fibrosis associated, the other three healed, no fibrosis associated. A disabling aortic aneurysm was detected in one instance. As in the group of employees not subjected to hazardous occupations the incidence of faulty or impaired vision is great and increases rapidly with age; actual percentages in this study is as follows: 3.3% in those between the ages of 17 to 35 years, 12.3% between 36 to 45 years,

13.5% between 46 to 55 years, and 18% between the ages of 55 to 70 years. The condition of the mouth is very poor, dental care being needed in 17.2% of men between the ages of 17 and 35 years, 33.3% between the ages of 36 to 45 years, 34.6% between the ages of 46 and 55 years, and in 32.1% of employees between the ages of 55 to 70 years.

High blood pressure, medically spoken of as hypertension is known to be a symptom of increasing age, which predisposes to apoplexy, cerebral accidents or "strokes." Laborious occupations, irregular living, poor oral hygiene, faulty elimination, etc., tend to aggravate this condition. The incidence of hypertension in this study is somewhat great and may be attributed in many instances to one of the previously mentioned facts. The actual percentage incidence below the age of 35 years for all classes of employees, namely 0.95, is very low as compared to 4.3%, 13.9% and 32.5% in the age groups 36 to 45 years, 46 to 55 years and 56 to 70 years respectively.

The incidence of hernia is not great in this series being 3.4%. The recording of hernias during a physical examination for occupational disease is not exactly fair to the employee when one considers the hundreds of men employed with hernias who are not exposed to an occupational disease hazard, and although they may perform more strenuous duties, are not examined prior to the commencement of employment.

The presence of varicose veins is characteristic of age, and often are indirectly the cause of prolonged periods of convalescence following mild injuries. The incidence in this series is as follows: 0.48% between the ages of 17 to 35 years, 5.8% between the ages of 36 to 45 years, 7.8% between the ages of 46 to 55 years and 5% between 55 to 70 years of age.

Syphilis, the dread of the poorer classes and a privilege of the wealthy was detected in 2.2% of cases which is somewhat below the 5% incidence recorded in many studies. This fact is interesting because as previously stated this study included a group of men who under any other circumstances would not have received such a detailed examination.

Ten cases of glycosuria which predisposes to diabetes were detected. This discovery alone is worth the cost of all the examinations.

The significance of albuminuria varies in re-

TABLE 1

Age, Years	Exposure or Occupation *Dust Exposure	Number of Examinations	Physical Status										Chest Findings																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
			Excellent					Below Average					Questionable					Healthy Chests					Minimal De- gree Fibrosis					First De- gree Fibrosis					Second De- gree Fibrosis					Tuberculosis					(Other Findings																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
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Technique MA200 KV (Variable Factor) Distance 72 in. Time .1 sec. (one-tenth sec.).

TABLE 1—Continued

Age, Years	Exposure or Occupation *Dust Exposure	Number of Examinations	Physical Examination Findings										Laboratory Findings																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
			Poor Vision					Poor Dental Hygiene					Rheumatic					Heart					Hernia					Varicosties					Positive Was- ermann and Kahn Test					Glycosuria					Albuminuria					Kidney Stone					Lead Absorption %																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
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Age, Years

Exposure or Occupation
*Dust ExposureNumber of
Examinations

Physical Examination Findings

Laboratory Findings

Kidney Stone

Lead
Absorption

%

No

%

No

%

No

%

No

%

No

%

No

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No

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No

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lation to the case in question, it may denote a low grade infection, a previous night out or if associated with hypertension denotes kidney involvement.

To culminate my talk, and to strengthen my plea for routine pre-employment and periodical medical examinations of all employees whether they are exposed to hazardous occupations or not, I wish to point out the following facts:

All conditions as discussed whether directly related to occupation or not can for the most part be prevented, at least improved, provided proper attention is given.

Faulty vision can be corrected, greater work efficiency resulting, less minor accidents occurring, and in all probability improved health of the individual.

Poor oral hygiene predisposes to infections, sinus trouble, rheumatism, arthritis, gastrointestinal disturbances, faulty elimination, with resulting sluggish habits, poor work efficiency and so on. All of which could be prevented.

High blood pressure characteristic of age and known to be aggravated by dietary indiscretions, often adds unnecessary burden to a silicotic lung. There are relatively few cases of disabling silicosis on record. When silicosis is complicated by a bad heart the clinical symptoms are much more pronounced, likewise when tuberculosis is a complicating factor. It is needless to mention the value of routine medical examination here.

Hernia and varicose veins, conditions which are amendable to treatment, may if they are not taken care of predispose to marked intestinal disorders, slow healing ulcers or even cerebral accidents.

Syphilis is not the dreaded disease considered by many and should not be the cause of discharge from employment except in its transmittal stage. It is today one of the few diseases for which there is a specific treatment, and an early diagnosis is imperative to cure. Hence the benefit of routine examination in this regard.

Diabetes responds miraculously to therapy, and it seems a pity that all people predisposed should not have the privilege of a routine urinalysis to detect it in its incipency. The occurrence of one diabetic coma in a small plant with a possible accidental injury associated may en-

tail more cost than a monthly routine urinalysis of all employees for an indefinite period.

One cannot help but assume, hardly conclude, because the series of cases is somewhat small that the incidence of occupational disease is not great in comparison to other more common every day ailments. Occupational diseases are known to be preventable, modern engineering methods have proven this; likewise, many of our common complaints can be prevented if detected early. The conclusion being, *routine pre-employment and periodical examination, the interest of the employer in this aspect of the employees welfare, with resulting work efficiency, fewer accidents, lower insurance cost, and lastly but not least, a healthy, robust and good-natured employee.*

175 West Jackson Boulevard.

DEVELOPMENT OF A FULL TIME SCHOOL HEALTH PROGRAM IN A CITY OF 125,000

C. H. BENNING, M. D., C.P.H.

Director of Health, Public Schools,

PEORIA, ILL.

It is possible that the methods used to develop a full-time school health system in a city of 125,000 people might be of interest to other workers in this field. It is not intended to imply that the methods used are new or revolutionary, but only that they depict the gradual building up of forces favorable to school health work, and in the long run to a health consciousness in the whole community.

Peoria, Illinois, is a city of 125,000 population, essentially of the industrial, hustling type. In fact, during the depression it was known as "The Bright Spot of America." This slogan was appropriated by the Association of Commerce as, although banks closed during the banking moratorium, very little monetary loss was sustained.

It is well known, Peoria is one of the largest whiskey distilling centers of America, with some firms doing a thriving business, even during the depression. Implement and machine plants are located here, and because of the federal government's agricultural aid program, have been working to capacity for the past several years. One of the tractor plants had the undoubted, worthwhile publicity of having its products used in the movies. It is possible that some of you have read, "Earthworm Tractors, Inc." and have seen

the movie version of this amusing story or collection of stories.

There is a local radio station with the call letters WMBD, meaning "World's Most Beautiful Drive" referring to a driveway on a high cliff overlooking the Illinois River which meanders at the base of the town that has grown from the river backward and upward to surmount the bluffs of the terrain. Three newspapers, one morning and two afternoon, vie with each other in promoting measures for civic advancement and betterment.

Peoria, although a city of 125,000 persons and the second largest incorporated area in Illinois has been somewhat neglected as to modern, efficient guidance in public health matters. The city health department has a part time director, 2 public health nurses, 1 of whom acts as a clerk, 1 milk inspector, 1 quarantine officer, and a registrar of births and deaths. Politics unfortunately, has always played a very major part in the appointment of all employees from the director down to the janitor, each incoming mayor appointing his candidate for commissioner of health, so that there is no continuity of service or program.

In 1935, one of the worst epidemics of diphtheria for many years invaded this city. There were 118 cases with 14 deaths, 13 among children. A severe epidemic of scarlet fever followed during which 817 cases were reported and 11 deaths occurred. To climax the situation, measles, the third Horseman of the Apocalypse, made a dramatic appearance with 456 cases reported and 9 deaths. It is evident that, due to an undermanned city health department, communicable diseases were rampant.

The school health department during the same time, although not handicapped so badly by politics, was understaffed and headed by a part time director. The number of school nurses employed was inadequate—3 nurses for 16,000 students in 27 schools. Daily contact with the schools was impossible, consequently contagion had every opportunity to gain headway.

Following the severe epidemics of 1935-1936, the school board, made up of 21 members—the largest school board of any city in the United States, finally agreed that a full time, properly trained public health man was needed to direct the activities of the school health program. An attempt was made at this time to unite the city

and school health departments under a full time man, but due to the fact that the city also had 20 aldermen no unanimity as to plan or choice of director for a joint health department could be reached.

The twenty-one man Board of Education is grouped into various committees to handle the business of the schools. The hygiene and sanitation committee recommends the appointment of the director of health, but the board as a whole has to approve his appointment. It is to this committee, and indirectly to the superintendent, that the director of health is responsible. The superintendent, under this form of board, carries out the recommendations of the board of education and is therefore somewhat hampered in initiating and presenting measures he may consider appropriate.

The personnel of the school health department consisted of 3 graduate nurses with several years of practical experience in school health work, but only one of whom had had such theoretical knowledge as is obtained by attending courses at accredited universities for public health training. One stenographer, who had no training as to records or record keeping, made up the full complement.

The physical equipment at the disposal of the director consisted of a small office with no records of previous activities, no files or cabinets for records and other necessary office supplies. The director was expected to huddle in with the nurses and stenographer and attempt to work out a satisfactory health program, combat contagion and educate the adult population as well as the children on how to become health conscious.

The chairman and members of the hygiene and sanitation committee endorsed the plans suggested for the improvement of health in the schools, and incidentally in the community as a whole. The newspapers were cooperative in every sense of the word and gave, and are giving, all publicity necessary to acquaint the city with what was and is being attempted in modern preventive medicine. The local medical society, when properly apprised of what the director intended to do, endorsed in open session the program as outlined.

It was found that the various service clubs, civic organizations, federation of women's clubs, parent-teacher and other school groups were vitally interested in and responsive to suggestions

to improve local health conditions, not only in the schools but throughout the city. Short radio talks of local interest are given weekly over the local station.

The Association of Commerce, made up of leading business, industrial and professional men, has taken a keen interest in all matters pertaining to health. In fact, so keen was its interest that early in 1936 the American Public Health Association was invited to make a survey of the health needs of the city and requested to recommend necessary changes. Unfortunately, before the survey was completed the association felt compelled to discontinue its efforts along these lines. It is apparent that there is a very live interest in health work here, but at the same time there are reactionary forces that are delaying a full measure of health activities as desired by the progressive and intelligent leaders of the community.

The first objective of the director was to obtain an adequate nursing staff. Three new nurses were requested, two were finally obtained. The two nurses had practical school experience besides a three month course in two large city departments, i. e., Chicago and Detroit. The next thing accomplished was the obtaining of more adequate office facilities.

It was necessary to convince the supply committee that record blanks were an important adjunct to any health department. These records and blanks as drawn up by the director were based on those used in the Detroit health department and in the Oakland County health department of Michigan.

Equipment to furnish the offices has gradually been obtained.

During this formative period the director was developing a plan of communicable disease control that will finally bear fruit.

Physical examination of school children is considered a prerogative of the family physician and only in exceptional cases does the director make complete examinations.

Open window rooms are maintained in six schools for malnourished and physically handicapped children, excluding those who are crippled, hard of hearing and have defective vision, who have separate classrooms and equipment in other schools set up for their care. More room is needed for this type of work as the city is still growing.

Health education is brought to the teachers and children through talks made by the director and nurses. The teachers are eager for instruction and are aiding the health program also by acting as a screen to sift out cases of suspected contagion and obvious physical defects which should be brought to the attention of the health department. Children with defects are referred to the family physician wherever possible.

Early in the school year it was decided that, due to the great prevalence of diphtheria in 1935, immunization of school and preschool children against this disease was urgent and pressing. Contact was made with the medical society through the public relations committee, and the request made that free diphtheria immunization be offered to all children up to ten years of age in the schools who had not previously been inoculated, and to all preschool children from one year of age up. Age one was chosen so as to give the family physician and pediatrician ample opportunity to take care of this preventive treatment if the parents could be persuaded to bring the infants to the office.

The medical society, with the past experience of a devastating epidemic, endorsed this plan. Questionnaires were sent out to all parents of school children, requesting information as to diphtheria immunization and smallpox vaccination, and urging them to go to their family physician if they could afford to pay. When returned, these slips were sorted and tabulated. Another slip was then sent for the parents to sign, thus giving consent that this be done by the school health authorities, if the parents were unable to pay. This slip also requested that preschool children be brought in. The response was excellent and there is no doubt that interest was stimulated in parents able to contact their own family physician. One injection of alum precipitated toxoid was used. No untoward reactions were observed, although 1,691 children from 1 to 10 years received the treatment.

Smallpox was the next disease attacked. It was felt by the director that although this disease was on the increase in the state, very few cases were being reported in Peoria. Under these circumstances no mass vaccination was offered in the schools, but an intensive radio campaign with short talks to parents and excellent newspaper publicity built up a responsive public consciousness. The parents were requested

to take the children to the family physician for vaccination. Those who could not afford to pay are referred to the "Neighborhood House" of the Visiting Nurses Association and to the clinic held in the city health department.

The increasing interest throughout the country in the tuberculosis control program among high school students made it imperative for the health service to launch a campaign to tuberculin test and x-ray all positive reactors. To obtain the best results it was felt that talks to the parent-teachers association of one of the high schools were essential. That of Central High School was chosen as being the most efficiently organized. Three talks were given and at the final one, the chairman of the health committee made a motion that the parent-teachers association endorse such a campaign and further that the health department of the school and director of the Municipal Sanitarium be asked to arrange the necessary steps. This motion was passed unanimously.

The next step was to talk to the high school students and explain the necessity to follow-up with x-ray for positive reactors. Mimeographed letters, explaining the set-up, with consent slips were then sent out to the parents of 1,913 students. On the consent slips was the usual request for the parents' signature to either consent or refuse, and also a place to state whether the parents could or could not afford to pay for x-ray, if necessary, by their own physician. On the back of the cards a bar diagram was placed showing the death rate for tuberculosis and other major communicable diseases to stress the greater danger from tuberculosis.

Of the 1,913 cards sent out 1,435 or 75% were returned. Four hundred fifty-five of the 1,435 pupils of 31.2% refused to take the test. The remainder either signed the consent slips to have the tuberculin test, or stated they had had the test recently, or would go to their family physician for the test. Seven hundred ninety-six or 55.5% of the 1,435 pupils actually took the test.

Seven hundred and forty-eight students out of the 796 returned for the reading. Six hundred and two of the 748 or 80.5% were negative, and 146 or 19.5% were positive reactors. Forty-five students stated they could not afford to pay for the x-ray follow-up. Arrangements have been made to pay for these x-rays through the interested organizations.

Other high schools are now requesting this service and as soon as means can be arranged to pay for x-raying of the positive reactors, these schools will also be tuberculin tested.

Another measure leading to better health, viz.: compulsory tuberculin testing annually of all school personnel, from the janitor up to the superintendent, has been introduced and presented to the School Board with the hope that it will be passed in the near future. In order to make the measure as fair as possible, it is stated that should a teacher or other school personnel be found to have tuberculosis in the open or communicable form, said person will be given a year's leave of absence and continue to draw the salary difference between a substitute's pay and the pay said person was receiving at time of diagnosis. After the first year only negative reactors will be required to be tested annually. Positive reactors, if showing no signs of active disease, will require only an x-ray. Persons who, for religious scruples, refuse the tuberculin test will be required to take an x-ray annually. All x-rays of positive reactors will be paid for by the School Board for the first year, if the measure is passed.

Due to the increasing toll from accidents among school children, as shown in the report of the Metropolitan Life Insurance Company, February, 1937, more and more attention to accident prevention education is being stressed in all schools, and all possible means at the disposal of the health department are being utilized to forcefully visualize the present trend.

The writer has tried to depict the various steps in building up a worthwhile full time school health program, and in doing so is trying to use every community group or organization available so that a cooperative and harmonious result shall be obtained. Undoubtedly, greater efficiency and more far reaching achievements could be obtained if the school health system were an integral part of a well balanced city health department.

Legislation has been passed recently creating the machinery for a non-political board of health and a specially allocated tax fund with which to run a full time health department, properly staffed and equipped.

Forces advantageous to public health have been on the march during 1936 and 1937, and it seems probable that with the greater publicity

on the various phases of preventive medicine undertaken, a measure of success will be obtained and greater good to all the people of Peoria will be accomplished.

DID NOT TAKE OFF HIS HAT

A salesman was driving along a country road one day when he saw a red-headed Negro child playing in front of a little shack sitting on the edge of a clearing. He had never seen a red-headed colored child before, so his curiosity was aroused. Stopping his car in front of the yard, he called out to the old colored mammy who was sitting on the porch:

"Is that your child?"

"Yassur, he is," answered the mammy.

"Well, tell me something," he went on, "how did he happen to get red-headed?"

"He was borned lak dat," replied mammy.

"I can't understand that," said the salesman. "You certainly don't have red hair. Is there any red hair back in your family?"

"Naw suh, not a bit," replied mammy.

"Well, how about the father of the child, is he red-headed?" the salesman persisted.

"Ah don' know dat, mister," answered the mammy. "You see, dat gentleman didn't take off his hat."

FINGER PRINTING IS NOT INFALLIBLE

Contrary to popular belief, there is a chance for error in the Bertillon system of identification of criminals. This does not mean that the popular belief that two fingerprints are alike is erroneous. So far no two fingerprints have been recorded that tally, but Bertillon measurements, accurate as they are, are not wholly infallible.

Fingerprinting's first use, the identification of criminals, has been enlarged and is now used for the identification of all manner of persons as well as for infants in hospitals.

PROFESSIONAL FORTITUDE

Medical Visitor to Hospital: "Who in the world is that bellowing and moaning so in the private room?"

Assistant Superintendent: Oh, that is Dr. Gauzewick, our senior visiting surgeon; he had a small furuncle on the back of his neck opened yesterday."

Society Proceedings

COOK COUNTY

CHICAGO MEDICAL SOCIETY

PUBLIC LECTURE

Sunday March 13, 1938, 3:30 P. M.

GOODMAN THEATRE

"DIABETES—A CONTROLLABLE DISEASE"

Dr. Robert W. Keeton

Professor of Medicine, University of Illinois College of Medicine

Wednesday, March 16, 1938

PROGRAM

Importance and Significance of Pyuria in Children.
Herman L. Kretschmer.

Discussion—Isaac A. Abt, Joseph Brenneman, Vincent O'Connor, John A. Bigler, J. S. Eisenstaedt.

Vaginitis in Childhood—John L. Reichert.

Discussion—Alexander A. Day, Russell D. Herrold, Samuel J. Hoffman.

GREENE COUNTY

Regular meeting of Greene County Medical Society held in the basement of the Baptist Church, Carrollton, Illinois, Friday, March 11, 1938.

Meeting called to order by the president, Dr. E. W. Thomas, at 7:30 P. M. Business session was dispensed with and Dr. Cyrus E. Burford was introduced. Dr. Burford gave us an illustrated lecture on "Tumors and Cysts of the Kidneys," which was very instructive and interesting. Among many other practical points he impressed the importance of a G. U. Workup in all cases of hematuria where the etiology is at all questionable.

Dr. Paul Titterington was next introduced and gave us an illustrated lecture on "Unusual Fractures of the Bones of the Face." He also gave an illustrated lecture on his archiological investigations in which he showed many interesting skeletons of Indians. Some of these skeletons showed healed fractures. Others showed evidence of bone disease, some of which were Luetic. Thus suggesting that the white man may not be the sole offender. We can not, of course, arrive at the exact age of these skeletons, but it is probable that they ante-date contact with the white man.

The Society enjoyed this lecture very much, and asked many questions relative to habits of the Indians. The visiting physicians from Jerseyville and elsewhere were welcomed in a few well-selected words by our President, and were invited to visit us again. The move to unite the Jersey County and the Greene County Societies was inaugurated and will be reported on later.

Next meeting will be held in Roadhouse, Friday, April 22, 1938, at 6:30 P. M.

W. H. HARRISON,

Secretary.

Marriages

WILLIAM DEAN MOHLENBROCK, Murphysboro, Ill., to Miss Katherine Louise Weinberg of DuQuoin, Dec. 18, 1937.

DAVID H. MORTON to Miss Dorothy Lucille Young, both of Elmwood, Ill., in Peoria, Dec. 23, 1937.

JULIUS ROOS, Chicago, to Miss Gretel Marx of Flonheim, Germany, recently.

Personals

A symposium on hyperparathyroidism was presented before the Chicago Urological Society February 24 by Drs. Fuller Albright and Richard Chute, both of Boston.

Dr. Winthrop M. Phelps, Baltimore, discussed "The Care and Treatment of Cerebral Spastic Paralysis" before a joint meeting of the Chicago Orthopedic Society and Chicago Pediatric Society February 11.

The St. Clair County Medical Society was addressed in East St. Louis February 3 by Drs. Robinson Bosworth, East St. Louis, and Robert C. Farrier, Escanaba, Mich., on tuberculosis and public health, respectively.

Dr. John R. Norcross addressed the Chicago Orthopaedic Society, March 11, on "Sympathicoblastoma"; Dr. John J. Fahey, "Muscular and Skeletal Changes in Arachnoidactyly," and Dr. Harold A. Sofield, "Steel Pin Fixation for Fractures of the Neck of the Femur."

Dr. Willis S. Lemon, Rochester, Minn., discussed "The Development and Metamorphosis of the Primary Tubercle" before the Peoria City Medical Society in Peoria March 15. The society was addressed March 1 by Dr. Harry Culver, Chicago, on "Nonspecific Kidney Infections Including Their Surgical Complications."

Dr. Edward C. Holmblad, regional chief surgeon, Railway Express Agency, addressed the Chicago Society of Industrial Medicine and Surgery, February 14, on "Factors Determining Compensation from the Medical Viewpoint," and Mr. Henry H. Rolfe, past president, Casualty Adjusters Association, "Compensability of Injuries from a Legal Standpoint."

Drs. F. H. Falls and J. L. Baer presented an obstetrical program at Monmouth on March 17 before the doctors of the 4th Councilor District.

Dr. A. A. Goldsmith gave a talk on "The Significance of the Stool Examination" before the doctors of the DeWitt County Medical Society at Clinton, March 18.

Dr. Henry E. Irish gave a paper on "Differential Diagnosis of Pneumonia in Children" before the doctors of Jefferson-Hamilton, Wayne, Franklin and Saline Counties, March 18.

Dr. James J. Callahan was invited to talk on "Fractures" before the Christian County Medical Society, March 29.

Dr. Frederick H. Falls gave a paper on "Management of Eclampsia Toxemia" before the

Will-Grundy County Medical Society in Joliet, March 30.

Dr. Willard L. Wood of the Presbyterian Hospital of Chicago, addressed the Du Page County Medical Society, February 16, at Wheaton. His topic was "Bronchial Asthma."

Dr. Arthur F. Abt was invited to attend the Sixteenth Annual Conference of the Milbank Memorial Fund, held at the New York Academy of Medicine on March 29, 30 and 31.

Dr. Gregory Zilboorg, New York, among others, participated in an all day conference sponsored by the Council of Social Agencies of Chicago February 23; his subject was "Psychiatry and Human Behavior."—The Chicago Council of Medical Women was addressed March 4 by Lillian Eichelberger, Ph.D., on "Experimental Hydronephrosis," and Dr. Julia Faith S. Fetterman, Philadelphia, "Symptoms and Signs of Urinary Disease in Women."

Dr. David J. Davis, dean and professor of pathology, University of Illinois College of Medicine, delivered the second Christian Fenger lecture of the Institute of Medicine and the Chicago Pathological Society at the Palmer House March 25; his subject was "Pathology as a Basis for the Study of Health."

Dr. Thomas M. Rivers, director, the Hospital of the Rockefeller Institute for Medical Research, New York, delivered the Gehrmann lectures of the University of Illinois College of Medicine, March 23-25. His subjects were "Viruses and Virus Diseases"; "Cultivation of Vaccine Virus: Methods Employed, Types of Information Obtained, Jennerian Prophylaxis with Cultured Virus," and "Poliomyelitis."

Dr. Charles B. Reed presented a paper on "Obstetric Hemorrhages" before the doctors of Iroquois-Ford Counties at Watseka on March 17.

Dr. Arthur S. Sandler spoke on "Prevention of Contagious Disease" before the doctors of Union, Perry and Jackson Counties, March 17 at Carbondale.

Dr. M. J. Seifert while at Mineral Springs, Texas, spoke before the Mineral Springs High School and the Lions Club. He also addressed the staff of Nazareth Hospital on the Surgical Treatment of Angina Pectoris.

Dr. James T. Case gave a "Resume of the Indications and Applications of X-Ray Examinations of the Colon" before the Will-Grundy County Medical Society at Joliet, March 16.

Dr. R. K. Packard was the guest speaker at the Laity Day meeting of the Will-Grundy County Medical Society, March 16. Subject, "Medical Trends."

Dr. Harold H. Hill took part in a Maternal Welfare program held by the doctors of the Eighth Councilor District in Mattoon, March 27.

Dr. Edmund Jacobson addressed the Aux Plaines Branch of the Chicago Medical Society at St. Annes Hospital on March 9. The topic, "You Must Relax," was specifically addressed to the internes brought together at this third and last meeting given by the Student's Advisory Committee.

Dr. Edmund Jacobson addressed the Englewood Branch of the Woman's Auxiliary to the Chicago Medical Society on "Relaxation and the Doctor's Wife" on March 11.

Dr. Henry E. Irish gave a paper on "The Differential Diagnosis of Pneumonia in Infants," at the meeting held at Eldorado, Illinois, March 18 under the auspices of the Maternal and Child Health Bureau.

Dr. C. Leon Wilson delivered a series of talks—"Prenatal Care, Mechanism of Normal Labor and Puerperal Toxemias"—to the Post-graduate Medical Assembly at Prairie View College, Prairie View, Texas on March 8 to March 11, 1938.

Dr. R. G. Leland and Dr. Morris Fishbein will speak on "Hospital Service Plans" and "Medicine and the National Policy" respectively, at the meeting of the North Side Branch of the Chicago Medical Society in the Drake Hotel at 8:00 P. M., April 7. The discussion will be opened by Dr. Harold M. Camp.

Dr. Clarence F. G. Brown gave a paper on "Chemistry in Medicine" before the Chemistry Club of the Central Y.M.C.A., on March 23, 1938.

Dr. Edmund Jacobson read a paper entitled, "Variations in Blood Pressure with Skeletal Muscle Tension (Action-Potentials) in Man. II. The Heart Beat," at the Annual Meeting of the American Physiological Society in Baltimore, April 2.

Dr. William D. McNally gave a talk before a joint meeting of the Winnebago County Medical Society and Bar Association at Rockford, Illinois, on March 2 on "The Experiences of a Coroner's Physician." On March 24 he gave a talk to the Exchange Club of Marion, Indiana, on

"Poisons in Our Everyday Life." In the evening he spoke to the Grant County Medical Society on "Diagnosis and Treatment of Some of The Common Poisons."

News Notes

—The Institute of Medicine of Chicago announces an illustrated public lecture by Dr. Raymond Pearl, Professor of Biology in the School of Hygiene and Public Health and the School of Medicine of The Johns Hopkins University, Baltimore, to be held at Thorne Hall, Lake Shore Drive and East Superior Street, on Friday evening, April 15, at 8:15 o'clock. The title of the lecture is "Long Life and Living."

—The Fourth Annual Session of the American Neisserian Medical Society will be held in Washington, D. C. on May 16 and 17, 1938 in the Public Health Auditorium, located at 19th Street and Constitution Avenue, N. W.

The session will open with a symposium on sulfanilamide which will be timely and of great value. Perrin H. Long, M. D., of the Johns Hopkins Hospital will deliver the principal address. Dr. Long's work puts him in the position of being the country's leading authority on the chemistry, mode of action, and clinical use of sulfanilamide. The society is indeed fortunate and highly honored in having Dr. Long as guest speaker.

—On Friday, February 25, Dr. H. W. Schumacher, President, and Dr. A. E. Goebel, Secretary of the Effingham County Medical Society, representing the State Medical Society, presented to Dr. J. G. Allen of Edgewood, a gold emblem in honor of his having practiced medicine for fifty years. This makes Dr. Allen a member of the Fifty Year Club of the Illinois Medical Society.

Dr. Allen was born in Kentucky and practiced medicine in Louisville for fifteen years. He has lived in Edgewood for the past thirty-five years.

—The Chicago Neurological Society was addressed February 17 by Drs. Harold C. Voris and Milton H. Dresner on "Hodgkin's Disease of the Spine with Paraplegia, Complicated by Pregnancy"; Harry A. Paskind, Chicago, and Robert C. Lonergan, Evanston, Ill., "Treatment of Myotonia Congenita with Quinine"; Karl A. Menninger, Topeka, Kan., "Emotional Factors in Hypertension," and Horace W. Magoun,

Ph.D., "Activation of the Heat Loss Mechanism by Localized Heating of the Brain."

—The Chicago Gynecological Society and the St. Louis Gynecological Society held a joint session February 19. Clinics were held at the Chicago Lying-In and Research and Educational hospitals. The following program was presented by members of the St. Louis society:

Dr. William C. Stude, Cesarean Section—An Analysis and a Discussion.

Dr. Thomas K. Brown, Results of Cultures of the Uterus at Cesarean Sections.

Dr. Melvin A. Roblee, Etiology of Cervicitis.

Carl G. Hartman, Ph.D., department of embryology, Carnegie Institution of Washington, Baltimore, delivered a lecture on "The Physiology and Control of Ovulation."

—A plan to inspect and appraise the public and private diagnostic laboratories in Illinois has been announced by the state department of health. The immediate object is to improve and standardize laboratory tests for syphilis. Each laboratory that volunteers to participate in the plan will be inspected at intervals by a representative of the state department of health. Assistance will be offered when needed, and standard antigen for making blood tests for syphilis will be provided by the department. Certificates of approval will be issued by the department to each laboratory maintaining the required technical and professional standards and a register of all approved laboratories will be kept. There are about 225 of these laboratories in the state.

—Public and parochial school authorities throughout the state will be asked to require the vaccination of teachers as a condition of employment and to urge on parents the vaccination of all children on entering school for the first time, in accordance with a new policy announced February 16 by the state department of health. A three months program is now under way to encourage the medical examination of children who expect to enter school for the first time next fall with emphasis being placed on vaccination against smallpox and inoculation against diphtheria. School authorities will be asked to consider the advisability of inserting a vaccination clause in the new contracts with teachers. The plan is designed to prevent periodic outbreaks of smallpox in Illinois.

—The Illinois Military Area, Organized Reserves, U. S. Army, will hold a military medical training course for medical department reserve officers in Chicago March 27-April 9. This is the first to be held in Chicago. The morning hours will be devoted to clinics, lectures and classes in professional work for medical and dental reserve officers with the medical and dental schools of Chicago cooperating. There will be a general course in medicine and surgery and special courses on the eye, ear, nose and throat, urology and operative surgery. All the courses are offered without cost except the course in operative surgery, for which a small fee will be charged to cover the cost of the material used. The afternoons and evenings will be devoted to a program of military instruction under the direction of Col. Roy C. Heflebower; subjects will include tactics and technic of the combat arms; field sanitation, military hospital administration, military organization, medical service of the infantry division, the army corps and the field army. The military instructors will be regular army officers from the headquarters of the sixth corps area, the Illinois military area and Fort Sheridan. Speakers will include Major General Hugh A. Drum, commanding the second army and the sixth corps area, and Major General Charles R. Reynolds, surgeon general of the army.

—The Chicago Tumor Institute, 21 West Elm Street, was opened March 21. The institute is chartered in Illinois, not for profit, to conduct research on the causes, diagnosis and treatment of cancer, to instruct and assist physicians, surgeons, clinics and hospitals in the diagnosis and treatment of cancer and to train cancer specialists. About 200 physicians from all parts of the United States, Canada, South America, Mexico and the Hawaiian Islands have applied for courses of instruction in the institute. The building, four stories high, was formerly used by a private school and has been remodeled to suit the facilities of the institute. The first two floors are in active use and the third is given over to research laboratories; the fourth floor is not being used at present. There is a three story administration building connected with the clinic. Equipment includes two x-ray machines of medium voltage and two of the supervoltage type. There will be available 11 Gm. of radium,

10 Gm. of which will be used in the form of a radium bomb. Indigent persons suitable for radiation will be accepted at the clinic without charge. The trustees include Dr. Ludvig Hektoen, Arthur H. Compton, Ph.D., Mr. Roy C. Osgood, Mr. Modie J. Spiegel, Mrs. Francis Neilson, Mrs. Arthur Meeker, Mr. Alfred Busiel, Dr. Max Cutler. The women's board includes Mrs. Meeker, who is chairman, Mrs. James Ward Thorne, the vice chairman, Mrs. Harold Beacom, Mrs. Bruce Borland, Mrs. John Crerar, Mrs. Joseph M. Cudahy, Mrs. Gerhard Foreman, Mrs. Charles B. Goodspeed, Mrs. Neilson, Mrs. James R. Offield and Mrs. Kersey Coates Reed. The institute will be directed by a scientific committee consisting of Dr. Cutler, director, Dr. Henri Coutard of the Curie Institute, Paris, France, Sir George Lenthal Cheatle, emeritus professor of King's College Hospital, London, England, Dr. Compton and Dr. Hektoen.

—The women physicians of the Illinois State Medical Society will meet at a 12 o'clock luncheon on Tuesday, May 17, the first day of the convention. In the evening of that day a scientific program will be given. For further details of arrangements see May JOURNAL.

Deaths

WILLIAM RUFUS APPLE, Paris, Ill.; Northwestern University Medical School, Chicago, 1911; aged 59; died, Dec. 11, 1937, in St. Anthony's Hospital, Terre Haute, Ind., of heart disease.

DANTE ANGELO BECCHETTI, Chicago; Loyola University School of Medicine, Chicago, 1931; resident physician to the Martha Washington Hospital; aged 33; died, January 1, of coronary thrombosis.

SAMUEL MILTON BLACK, Georgetown, Ill.; University of Nashville (Tenn.) Medical Department, 1899; formerly health officer, mayor, member of the board of education and bank president; aged 69; died, Dec. 20, 1937, of tuberculosis of the lungs.

WILLIAM FRANKLIN BURRELL, Urbana, Ill.; Rush Medical College, Chicago, 1882; member of the Illinois State Medical Society; formerly member of the state legislature and mayor of Urbana; aged 80; died, Dec. 19, 1937, of arteriosclerotic heart disease.

FRANK CARYL DAKIN, Evanston, Ill.; College of Physicians and Surgeons, Medical Department of Columbia College, New York, 1890; a Fellow, A.M.A.; aged 69; died, January 2, of heart disease.

WALTER AUGUST DAY, Alton, Ill.; Bennett Medical College, Chicago, 1914; served during the World War; aged 47; on the staff of St. Joseph's Hospital, where he died, Dec. 30, 1937, of hypostatic pneumonia and cardiorenal vascular disease.

EDWARD EVERETT EVANS, Chicago; Detroit College of Medicine, 1900; a Fellow, A.M.A.; past president and secretary of the Lake County (Ind.) Medical Society; formerly on the staffs of the Mercy and Methodist hospitals, Gary, Ind.; at one time coroner of Lake County, Ind.; aged 62; died, Dec. 5, 1937, of carcinoma of the prostate, metastatic spinal carcinomatosis, urinary retention and sepsis.

ISAAC FOSTER HARTER, Stronghurst, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1877; a Fellow, A.M.A.; formerly druggist, postmaster and member of the board of school trustees; aged 86; died, Dec. 25, 1937, of pneumonia.

FREDERICK CHRISTIAN JOESTING, Alton, Ill.; Washington University School of Medicine, St. Louis, 1901; a Fellow, A.M.A.; aged 59; died, Dec. 22, 1937, of heart disease.

ANTONIO G. MALTESE, Chicago; Regia Università di Napoli Facoltà di Medicina e Chirurgia, Italy, 1903; member of the Illinois State Medical Society; served during the World War; aged 58; died suddenly Dec. 17, 1937, of angina pectoris.

FRANCIS THEODORE ROLLINS, Fox Lake, Ill. Chicago College of Medicine and Surgery, 1916 a Fellow, A.M.A.; served during the World War; aged 53; died, Dec. 22, 1937, at St. Therese's Hospital, Waukegan, of pneumonia.

JAMES JOHN ROSE, Marshall, Ill.; Chicago Homeopathic Medical College, 1896; aged 74; died, Dec. 18, 1937, of pneumonia.

LEONARD C. SCHULZE, Chicago; Dearborn Medical College, Chicago, 1905; a Fellow, A.M.A.; aged 65; member of the Board of directors and on the staff of the Garfield Hospital, where he died, Dec. 12, 1937, of aneurysm of the aorta.

W. FRANK SNIDER, Liberty, Ill.; Hospital College of Medicine, Louisville, Ky., 1889; aged 73; died, Nov. 5, 1937, in Clayton, of chronic nephritis and uremia.

GRANT L. TAYLOR, Mount Vernon, Ill.; Barnes Medical College, St. Louis, 1895; county coroner; aged 69; died, Dec. 28, 1937, of pneumonia, due to an injury received in a fall.

WELLINGTON CLARENCE VAN WORMER, Homewood, Ill.; St. Louis University School of Medicine, 1910; member of the state department of health; aged 51; died, Dec. 13, 1937, in the Ingalls Memorial Hospital, Harvey, of cardiovascular renal disease.

JOHN W. VICK, Marion, Ill.; Vanderbilt University School of Medicine, Nashville, Tenn., 1894; member of the Illinois State Medical Society; aged 88; died, Nov. 26, 1937, of myocarditis and arteriosclerosis.

DAVID GILLISON WELLS, McHenry, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1898; aged 68; died Nov. 26, 1937, in Los Angeles, of gastric hemorrhage and acute dilatation of the heart.

SAMUEL A. WORSTALL, Aroma Park, Ill.; Jefferson Medical College of Philadelphia, 1882; member of the Illinois State Medical Society; aged 79; died, Dec. 12, 1937, in St. Mary Hospital, Kankakee, of hypertensive heart disease and pyonephrosis.

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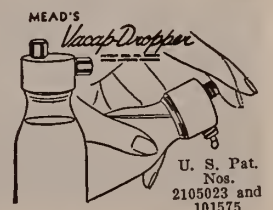
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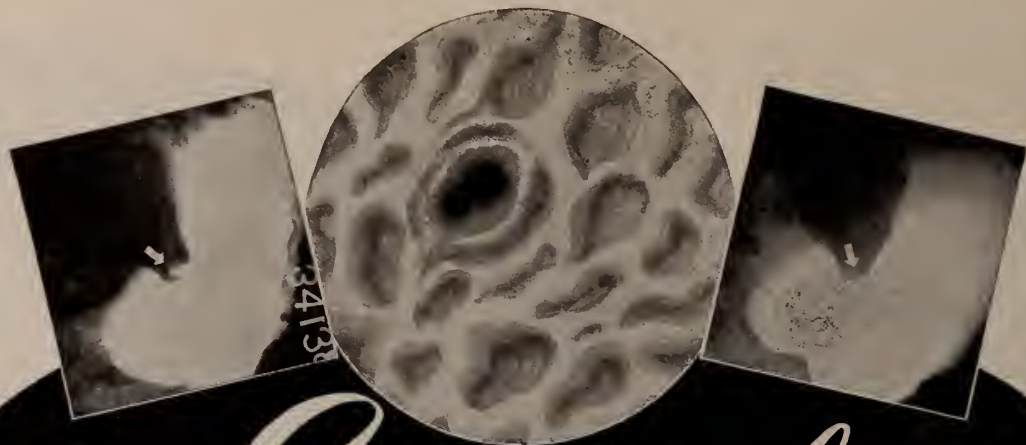


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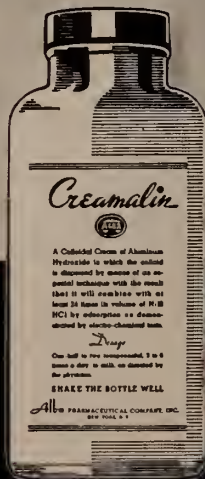
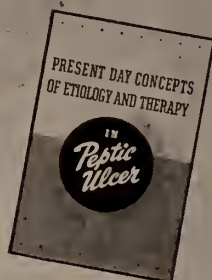
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PNEUMONIA IN INFANTS

Pneumonia in newborn or stillborn infants is a definite pathologic process which cannot be diagnosed with certainty until the autopsy, because it so resembles hemorrhages and atelectasis. It is the result of aspiration of toxic bile salts and irritative cornified epithelial cells which form the solid constituents of amniotic fluid which produces a non-bacterial irritation. The leukocytic exudation fills the lungs and prevents proper aeration and the extent of the process determines its severity. It is usually found in infants who have had long and complicated deliveries and who are either dead or in poor condition at the time of birth, and who are usually the victims of other pathological lesions sufficient to have caused death in themselves. Only a few died with no other pathological lesions and even those had some birth complications. Prevention of this condition is possible only by improving the prenatal conditions of infants and by improving, as much as is possible, the conditions under which they arrived in this world. Margaret Warwick, M. D., in *N. Y. State J. of Med.*

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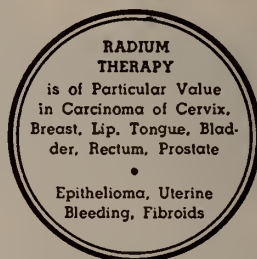
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INTERNATIONAL CLINICS. A quarterly of illustrated clinical lectures and especially prepared original articles on medicine, surgery and all the specialties by leading members of the medical profession throughout the world. Edited by Louis Hamman, M. D. Volume IV. Forty-seventh series. 1937. Philadelphia, Montreal, London. J. B. Lippincott Company.

A TEXTBOOK OF HEMATOLOGY By William Magner, **PRACTICAL BACTERIOLOGY, HAEMATOLOGY AND ANIMAL PARASITOLOGY.** By E. R. Stitt, M. D., Paul W. Clough, M. D., and Mildred C. C. Ough, M. D. Ninth Edition. P. Blakiston's Son and Company, Inc. Philadelphia. 1938. Price \$7.00.

This edition contains 208 illustrations, 4 in colors. 961 pages.

The volume is particularly rich in new material. More than ten years have elapsed since the eighth edition was published and the many important practical advances have necessitated a complete rewriting to permit their incorporation in a clear and orderly arrangement throughout the book. More space has been given to interpretation and diagnostic significance of laboratory methods and the data have been still further correlated with the clinical picture. The book considers all available types of laboratory tests and an index of useful procedures is included for assistance in the selection of appropriate tests.

A HISTORY OF WOMEN IN MEDICINE. From the earliest times to the beginning of the nineteenth century. By Kate Campbell Hurd-Mead, M. D. Illustrated. Haddam, Conn. The Haddam Press. 1938. Price, \$6.00.

As far back as forty years ago Dr. Kate Campbell Hurd-Mead, for many years a practicing physician in Connecticut, became fascinated by the achievements of women in the medical field and, encouraged by the approval of such outstanding men as Drs. Osler, Welch and Kelly of Johns Hopkins University, began what has resulted in a lifetime study. For it required years of personal research through most of the great libraries of Europe, where she found an astonishing mass of hitherto unpublished and unknown material hidden away in obscure Greek and Latin manuscripts, and in rare books in modern languages. It required personal acquaintance and correspondence with hundreds of other women physicians in nearly every country of the world. At last, after repeated delays, owing to Dr. Mead's desire to neglect nothing of importance in new research, the result of this study appears in the volume herewith announced, the first, it is hoped, of two volumes, which will together, for the first time, adequately reveal the place of women in the history of medicine.

That history, as it appears in this first volume, is one that begins in Egypt and Assyria, comes down through Greece and Rome to mediaeval Europe, and then includes the various countries of our contemporary world up to the beginning of the last century. Nor has the work, though it is fully documented from hundreds of

original sources, a forbidding flavor of dusty research. On the contrary, it is so written as to be fascinatingly readable; while scores of illustrations, gleaned from many obscure sources, enliven and dramatize its pages. The net result is a volume which no one interested in the history either of medicine, or of women's work in the world, can wish or afford to ignore.

The physical makeup of the book is in keeping with its subject matter. Its six hundred pages of text are attractively typed, clearly printed on excellent book paper, and adequately bound. The careful and comprehensive "Index" (over 50 pages) is in itself a mine of medical lore. Indeed, the book is well worth while in any general library as a medical history, quite apart from its special interest to women.

WORK BOOK IN ELEMENTARY DIAGNOSIS FOR TEACHING CLINICAL HISTORY RECORDING AND PHYSICAL DIAGNOSIS. By Logan Clendenen. Illustrated. St. Louis. The C. V. Mosby Company. 1938. Price, \$3.00.

This work is an expanded rearrangement of the laboratory note book method of teaching physical diagnosis and clinical history recording published in 1934.

THE MANAGEMENT OF THE SICK INFANT AND CHILD. By Langley Porter, M. D., and William E. Carter, M. D. Fifth revised edition. St. Louis. The C. V. Mosby Company. 1938. Price, \$10.00.

In this revision the authors have remedied some of the errors and omissions of former editions and have incorporated the more important and practical things which have developed since the former printings were made. They have also added to former editions some of the methods of management applicable to older children as well as to infants.

PNEUMONIA AND SERUM THERAPY. By Frederick T. Lord, M. D., and Roderick Heffron, M. D. Revised edition. London. Humphrey Milford: Oxford University Press. 1938. Price, \$1.00.

This hand book discusses fully the use of anti-pneumococcic serum in the treatment of pneumonia, with special attention to clinical diagnosis, selection of cases for serum treatment, identification of pneumococcus type, technic of administration, precautions to be observed, possible reactions and their treatment, and results of serum therapy.

A TEXT-BOOK OF OPHTHALMOLOGY. By Sanford R. Gifford, M. A., M. D., F.A.C.S., Professor of Ophthalmology, Northwestern University Medical School, Chicago; Attending Ophthalmologist, Passavant Memorial, Cook County, Wesley Memorial and Evanston Hospitals. 492 pages, with 249 illustrations. Philadelphia and London: W. B. Saunders Company. 1938. Cloth, \$4.00 net.

In this work the author has compressed within a limited space a volume which may be used for medical students and for the general practitioner. The essential facts of modern ophthalmology. The author has placed emphasis on really important facts, with little or none of those which are unimportant.

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Book Reviews

TREATMENT IN GENERAL PRACTICE. By Harry Beckman, M. D., Professor of Pharmacology at Marquette University, School of Medicine, Milwaukee, Wisconsin; Third edition, revised and entirely reset. 787 pages. Philadelphia and London: W. B. Saunders Company. 1938. Cloth, \$10.00 net.

This edition is no larger than the previous one though a great many more entities are presented in it. The section on diseases of metabolism has disappeared as a result of placing diabetes mellitus, diabetes insipidus and hyper insulinism in the new section on endocrine disturbances and giving obesity and malnutrition a sec-

tion of their own. There are also new sections on menstrual disturbances, diseases of the liver on bile passages, disturbances of water, salt and protein balance, disturbances caused by excessive heat, the anemias, and blood disturbances other than anemias. Rheumatic fever, rheumatoid arthritis, osteo-arthritis and gout now have their own chapter in the infectious disease section.

THE FIGHT FOR LIFE. By Paul De Kruif. New York. Harcourt, Brace & Co. 1938. Price, \$3.00.

This work attempts to tell what is the matter with the world in a new way. In the fight against syphilis, tuberculosis, maternal mortality, infantile paralysis, this publication comes at a time when public concern about these major ills is mounting rapidly.

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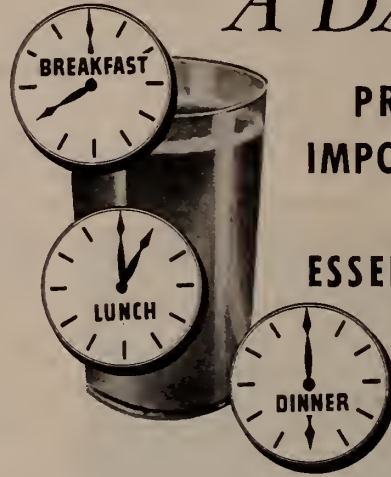
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Book Reviews

THE NEW INTERNATIONAL CLINICS. Edited by George Morris Piersol, M. D. Volume I, new Series One (old 48th). Philadelphia, Montreal, New York. J. B. Lippincott Company, 1938.

This is a book of original contribution: clinic; and evaluated reviews of current advances in the medical arts.

This book is new from cloth cover to index. It is the 189th volume. Few medical publications have had a longer life. The clinics have always kept up with medical progress and the new series I (old series 48th) is an outstanding issue.

The new editor is Dr. George Morris Piersol.

The editorial board has also been augmented by the addition of the following men: Russell L. Cecil, M. D., Nicholson Joseph Eastman, M. D., Karl Musser Houser, M. D., William John Kerr, M. D., John Walker Moore, M. D., Lewis J. Pollock, M. D., Isidor S. Ravdin, M. D., Borden Smith Veeder, M. D., George Barclay Wallace, M. D., Alan C. Woods, M. D. **MEN PAST FORTY.** By A. F. Niemoeller, A. B., with a foreword by Winfield Scott Pugh, M. D. New York. Harvest House. 1938. Price, \$2.00.

This is an up-to-date work on glandular weakness. It explains what impotence is, describes different kinds. It tells what may be done in cases amenable to treatment. It contains a mass of other information about impaired vigor.

Vitamin B₁ in a dosage of 320 Sherman-Chase units per day caused slightly accelerated maturation in basic behavior patterns, augmented alertness in attention and perception phenomena, and slightly accelerated adaptive behavior patterns in 142 normal full-term infants observed over a twelve-month period. Colby, *et al.*, *Am. J. Dis. Child.* 54:750, 1937.

Vitamin C may have a beneficial influence on the course of whooping cough. Eighty-one children with the disease were treated with large amounts of vitamin C. Thirty-four responded remarkably well, thirty-two were but moderately benefited and fifteen were considered unaffected. Otani, T., *Orient. J. Dis. Infants*, 20:1, 1936.

Typhoid Vaccine Intravenously gave excellent results in the treatment of undulant fever. The author reports two more cases in which cures followed this form of therapy. Kober, L. R., *Southwestern Med.* 21: 317, 1937.

Vitamin B₁ added to the infant's formula in an amount greater by 100 Sherman-Chase units than that usually received produced greater regularity of growth in 142 normal full-term infants. This indicates a stabilizing influence of vitamin B₁ on nutrition, Poole, *et al.*, *Am. J. Dis. Child.* 54:726, 1937.

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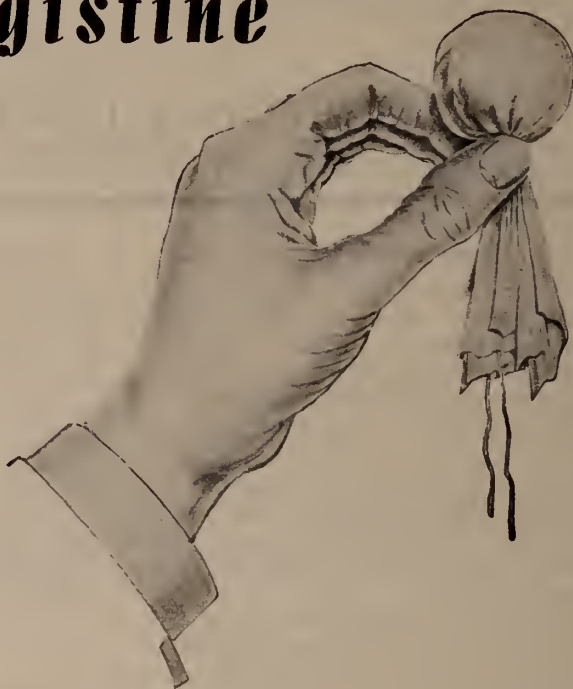
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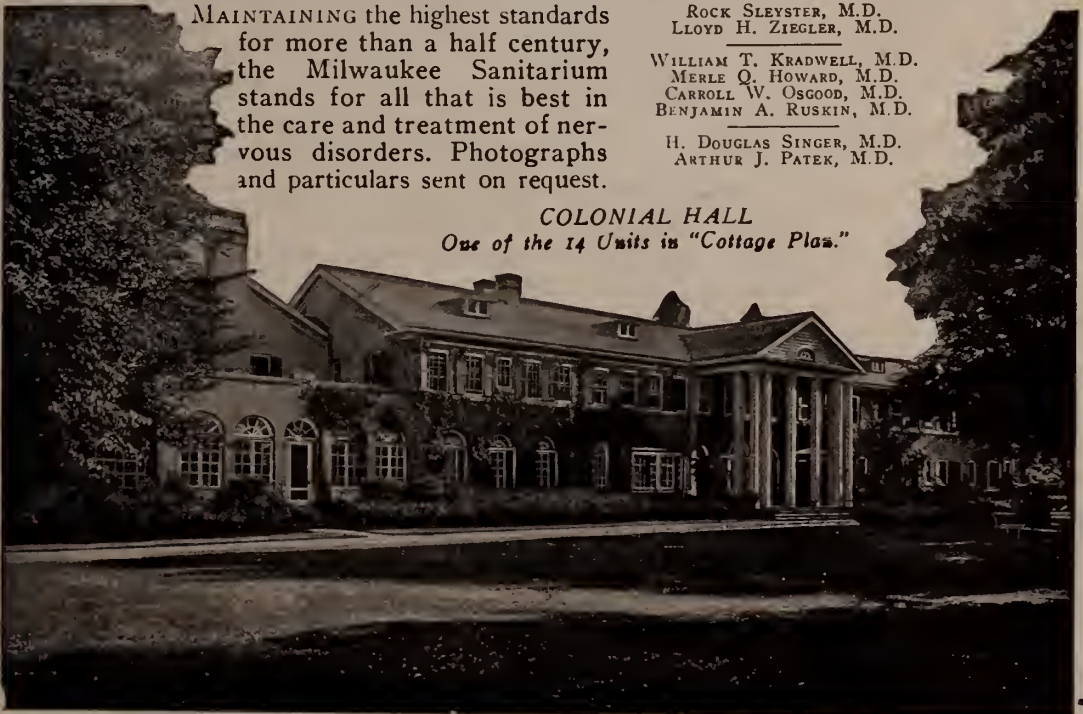
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Briefly, the exhausting operation is accomplished by mechanically passing the open can containing the raw food through a so-called “exhaust box” in which hot water or steam is used to expand the food by heat and drive out air and other gases contained in the food and in the can. The

times and temperatures used in commercial exhausting operations will naturally vary with the nature of the product (1).

After exhausting, the can is immediately permanently sealed, heat processed and cooled. During cooling, the contraction of the heated contents of the can creates the vacuum normally present in commercially canned foods.

With certain products, instead of exhausting as described above, the same effect is produced by preheating the food in kettles or similar devices; filling into the cans while still hot; and immediately sealing the containers. With still other products, an exhausting effect is produced by adding boiling water, syrup or brines to the food in the can. In some instances, exhausting is accomplished by mechanical rather than by thermal means. Specially designed sealing or “closing” machines are used to withdraw air and other gases by applying high vacuum to the can and immediately sealing on the cover.

Such in brief are the purposes of commercial exhausting operations and the means by which they are usually accomplished. Modern canners recognize that these operations are most important to the success of their canning procedures. They appreciate that only by strict supervision and control of exhausting operations can the quality and nutritive values of their products be maintained at a consistently high level.

AMERICAN CAN COMPANY

230 Park Avenue, New York, N. Y.

(1) Appertizing or The Art of Canning”,
A. W. Bitting, The Trade Pressroom,
San Francisco, 1937.

This is the thirty-sixth in a series of monthly articles, which will summarize, for your convenience, the conclusions about canned foods which authorities in nutritional research have reached. We want to make this series valuable to you, and so we ask your help. Will you tell us on a post card addressed to the American Can Company, New York, N. Y., what phases of canned foods knowledge are of greatest interest to you? Your suggestions will determine the subject matter of future articles.



The Seal of Acceptance denotes that the statements in this advertisement are acceptable to the Council on Foods of the American Medical Association.

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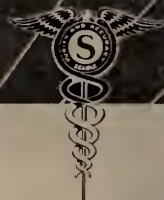
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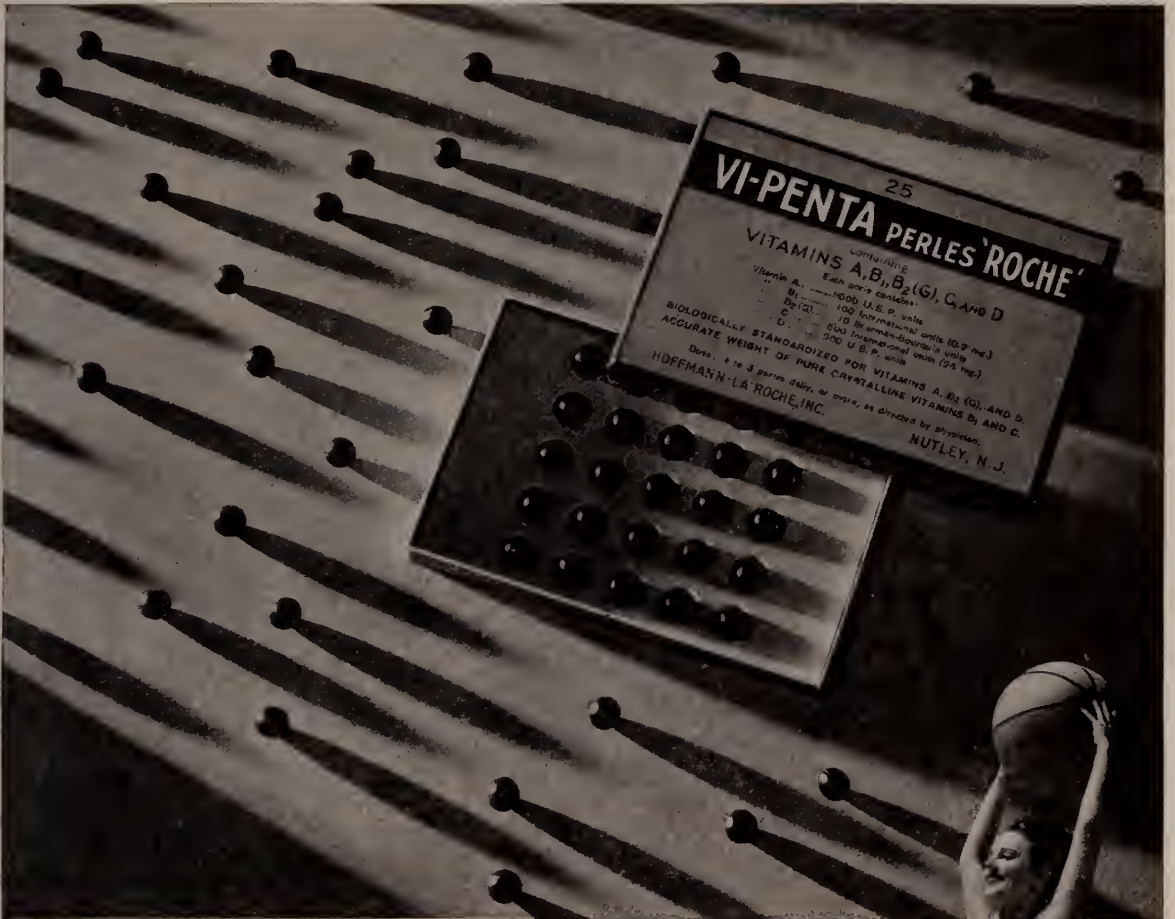
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**Proc. Soc. Exp. Biol. and Med., 1934, 32, 241-245
Laryngoscope, Feb. 1935, Vol. XLV, No. 2, 149-154
N. Y. State Jour. Med., June 1935, Vol. 35, No. 11
Arch. Otolaryngology, Mar. 1936, Vol. 23, No. 3
Laryngoscope, Jan. 1937, Vol. XLVII, No. 1, 58-60*

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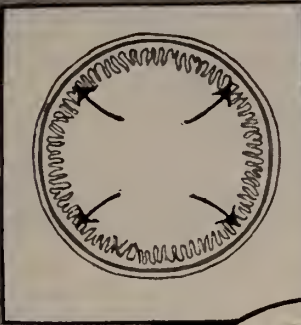
Proc. Soc. Exp. Biol. and Med., 1934, 32, 241-245 ☐ Laryngoscope, 1935, XLV, 149-154 ☐
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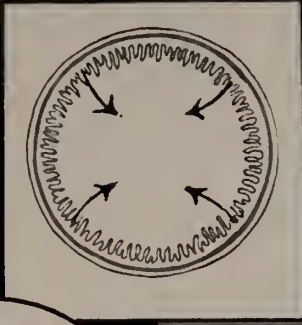
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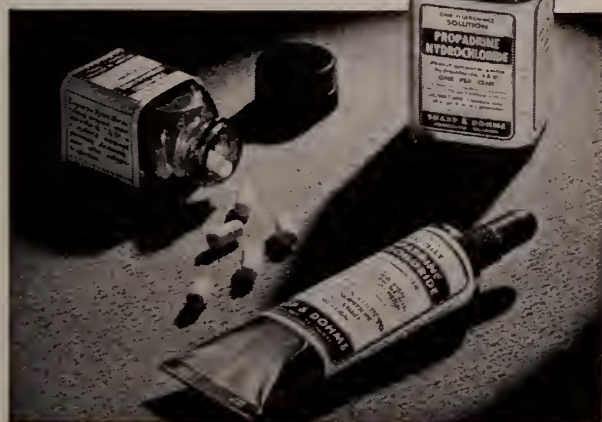
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ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF
THE ILLINOIS STATE MEDICAL SOCIETY

VOL. 73

OAK PARK, ILL., MAY, 1938

No. 5

ILLINOIS MEDICAL JOURNAL

Published monthly by the Illinois State Medical Society under the direction of the Publication Committee of the Council.

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Editorials

THE AMERICAN MEDICAL ASSOCIATION REPRESENTS THE TRUE FEELING OF THE RANK AND FILE OF THE PROFESSION

Efforts to discredit unity of principle and aim as to matters ethical and practical in the American Medical Association constitute the barrage with which socialistic propagandists are blinding the American people as to their real line of attack upon American institutions and genuine Americanism.

The most direct blow aimed at Americanism was that launched when the A. M. A. was in session last summer in Atlantic City, N. J., by the speech of Senator James Hamilton Lewis, followed later by the introduction of his bill into the Senate, the purpose of which, though cloaked with bunkum as to the "Federalization of Medicine" was really to hew a niche by which the socialization of American industry and American business might find easy entrance.

It is axiomatic that the "house divided against itself will fall," and the flank attack of the communistically minded is to attempt to prove that the medical profession itself is of two ideas as to the purposed socialization of the science itself and of the men who serve it best by serving humanity. Both during that A. M. A. session and since physicians and medical societies and organizations have been deluged with propaganda attempting to show that the profession is not of one mind where the proposed socialization of itself is concerned. Such propaganda is absolutely false. The American Medical Association represents the true feeling of the rank and file of the profession and the A. M. A. Is definitely against such a procedure. No matter how keenly the A. M. A. as an organization may feel that there should be revision and improvement and adaptation to the changing years in the presentation and practice of medicine, certain it is that there is not the slightest basis for the general public to believe or to be persuaded in any way

that the medical profession as a unit, or as individuals considers that lay dictation, especially that which is politically inspired, should presume to command the science and practice of medicine.

There are 106,000 members in the A. M. A. Of this number a much smaller number by far constitutes the "officialdom" than is the percentage of "straw bosses" inflicted upon the American people by our current Washington bureaucracy. Yet the idea by the socialistic element is so to circulate vicious propaganda as to disseminate feeling of no uncertain temper between the rank and file of medicine and the officers of the A. M. A.

Some months since in the columns of this publication was given editorial comment upon the two-volume survey issued by a subsidized corporate body working as the "American Foundation" and which in two elaborate and expensive volumes entitled "American Medicine—Expert Testimony Out of Court" pretended to have "held the mirror up to nature" in the task of reflecting the honest but suppressed opinions of the rank and file of American practicing physicians. To the wary eye, accustomed to discovering wolves in sheep's clothing there was far more to this survey than appeared on the surface. This periodical so expressed itself. The average doctor who keeps in touch with the times was prepared for many echoes as a result of this report but it would be difficult to say that any such men were quite prepared for the comment appearing under date of June 21, in the well-circulated magazine "*Time*" and which read in part:

"These books contained the recommendations of two thousand doctors for remedying the state of U. S. Medicine, including difficulties of sick people in getting good medical services and the difficulties of good doctors in earning a decent living. Deliberately omitted from those questioned were doctors who might have an ax to grind such as the executives and trustees of the American Medical Association. The A. M. A.'s executives and trustees were vigilantly prepared to balk Dr. Kopetzky's plan for the minor reason that Miss Lape (who conducted the American Foundation survey) had not consulted them, and for the major reason that it predicted a drastic reversal of Orthodox Medicine's most basic tenets."

This is an unfair slap in the face to the

A. M. A., which, though lay organizations do not realize it, is the voluntarily appointed voice of organized, ethical medicine. Among doctors, leaders are chosen for fitness and ability, and the democracy of the organization still prevails. Lay persons should recognize and should admit this fact.

ADVOCATING GOVERNMENT REGULATION OR OWNERSHIP OF THE OTHER FELLOWS BUSINESS OR PROFESSION

A mid-western grocer and a New England merchant have been advocating the socialization of medicine, though not of the grocer or merchant. Both the gentlemen have contended that Doctors make too much money and hold that medical services should be given to the people tax free or else at most infinitesimal cost. There are very few rich and comparatively few well-to-do medical men. Many grocers and merchants have grown in a few years from poor men to millionaires; some were even accused of profiteering in food stuff and clothing during the war. The contrast between the financial status of both grocers and mercantile dealers and physicians is sharp.

The inconsistency of the present day attempt to socialize "the other fellow's business" was beautifully portrayed by Henry Swift Ives of Chicago, when he said:

"A Chicago suburban village referred to as a millionaire colony maintains a municipal electric light plant when not one voted in a hundred in this village would for a moment favor the socialization of his particular business."

"In a prosperous middle western city one of the leading advocates of a municipally owned traction line is a prosperous insurance agent, but he bitterly opposes socialists in their effort to force the state into the insurance business."

"A lumberman in the far west is fearful that his state will go into the business of manufacturing fruit boxes for farmers at cost, yet he advocates compulsory state workmen's compensation insurance to the exclusion of private enterprise and competition."

"A meat packer advocates government ownership of the railroads but fights it for his own business. Numberless instances of similar inconsistencies could be given."

"It is remarkable that in industries most

threatened by government ownership, many of the leaders do not seem to care what becomes of the other fellow in the same boat, provided they themselves keep a few feet ahead of the socialist sheriff with his writ of ejectment."

"The real issue in America today is not whether certain industries shall be socialized, but whether the institution of private property shall be maintained."

"It is too much to expect people to take seriously protestations of one industry against government ownership when we find the leaders of that industry advocating government ownership of somebody else's business."

There is no more reason why medicine should be socialized than there is for the socialization of every other industry. People are just as much entitled to free groceries, free clothes, free shoes, and every necessity of life as there is for free medical attendance.

Socialism will wipe out the rights of the individual and destroys the initiative and self-reliance which is the bulwark of our country.

TOO MANY LAWS AND TOO MUCH REGULATION OF MEDICINE AND INDUSTRIES

Cost of upkeep of paternalistic regime and its theft of personal, intimate privileges beggars United States citizens as one person out of every five is on public payroll, income tax exempt, and public servants and pensioners are increasing at a rate unknown to previous history.

Overcentralization at Washington Usurps individual rights.

"The best government is the least governed."

New and interfering laws multiply in the United States as rapidly as the staggering tax levies that are required to pay for the administration of meddling statutes that nobody wants and nobody needs except members of the bureaucracy rapidly destroying personal freedom and making this country the worst of autocracies. The situation parallels pre-revolution France.

Bureaucracy is always a curse, and centralization a lethal menace under any conditions. Where the practice of medicine is concerned, it is fatal.

IT APPLIES TO MEDICINE AS WELL AS TO BUSINESS

Merle Thorpe in the "*Nation's Business*" under the title "A Call for Faith and Works" says: The small business man knows that political freedom and economic freedom go hand in hand. He knows that, when one goes, the other will go. He is close to his customers and knows that taxes come out of the market-basket, that business opposes taxes not because it pays them but because it collects them. He knows that excessive restrictions and regulations slow down trade, and his life is devoted to the speeding up of the trading of goods, labor and services.

The small business men of America are a mighty potential force in the preservation of the free and the ever increasing production and distribution of more things for more people. Each has his circle of influence. Just now the false inhibition which has been upon him, namely, that to criticize political policies is unpatriotic, is being lifted. He is becoming articulate. The "ferment back home" which Congressmen report today is largely the result of this awakening of the small business man. He is becoming more and more convinced that we are not getting ahead, and is skeptical of more political plans and promises.

THE GENESIS OF COMMUNISM

Toward the end of the great World War, the Bolsheviks (a Bolshevik is one who believes in the destruction of Capitalism by force) gained control of the government in Russia, as a result of the terrible Red Revolution. They formed what was called the Third International, which soon came to be known as the Communist Party. The leader of this movement was a man who called himself Lenin. His real name was Vladimir Ulyanov, and he died in 1924. Since then, his writings and sayings have become the gospel of all Communists.

CONVICTIONS TRANSLATE INTO VOTES

Herbert Corey, in the May, 1930 issue of "*Nation's Business*" under the heading of "Washington and Your Business" makes some telling comments relative to the personal or written appeal to our National and local law makers. Mem-

bers of the medical and allied professions should accept Mr. Corey's remarks at a one hundred per cent. valuation. It should stimulate lagging members of the profession to discard the "let George do it" attitude that has been so manifest with the doctors in the past. Mr. Corey said in part "every time a Congressman receives another letter with this kind of an introduction "I take my pen in hand. . ." Congress bites its collective lips. A man who writes in that tone must be reckoned with. If he likes what Congress is doing, that kind of a man does not write, because writing is a physical effort and an intellectual strain to him. When he does write, he can give reasons for his protest. Letters which may have been promoted may be neglected to a certain extent although the signers would not have written if they were not interested. Telegrams rate by the pound. Four pounds pro outweigh three pounds in opposition. A pen-in-hand letter means that the writer has convictions and may have friends and relatives. Convictions translate into votes.

PNEUMONIA AND SERUM TREATMENT

Riding in the first rank of death-dealing diseases, lobar pneumonia took an annual average of 2,465 lives in Chicago during the last five years. This disease still ranks third in the causes of death. Only cancer and heart disease deaths exceed those from pneumonia. No other communicable disease causes as many deaths as does pneumonia in Chicago or in any city where this infection is prevalent.

There is no question at the present time but that serum therapy, available for certain types of pneumococcus pneumonias, is effective in the treatment of this disease. Some of the eastern states and cities have shown definitely that many lives can be saved when serum is used. It is more than likely that the present mortality can be cut almost in half in those types of pneumonia for which sera are available. Physicians in Chicago are urged to acquaint themselves with the available knowledge concerning specific serum treatment of pneumococcus pneumonias.

The entire epidemiologic set-up of pneumococcus pneumonias points definitely to the fact that the control of this disease toward reducing mortality can be undertaken effectively.

At the present time serum is available for types I, II, V, VII and VIII pneumococcus lobar pneumonias. The specific serum is obtained from horses after having given these horses regular series of immunization. Chicago, at the present time, has no organized public health control program, because the Illinois Department of Public Health does not supply antipneumococcic serum gratis to physicians for indigent and other pneumonia patients. Funds are not now available to the

Board of Health for the purchase of serum for free distribution in indigent cases. Much, however, can be done toward reducing pneumonia deaths by the physicians of Chicago. Wherever possible, physicians are urged to administer to their patients sick with pneumonia, type-specific sera. In order for many of us to include in our therapeutic armamentarium type-specific sera, it is necessary that we become intimately acquainted with prerequisite knowledge concerning pneumonia and serum administration. This consists of:

1. Early diagnosis.
2. Rapid typing.
3. Careful history as to previous sensitization to horse serum and knowledge of all possible reactions to the horse serum. The refined concentrated anti-pneumococcus serum now in use does not give as severe reactions as were formerly experienced.
4. Early administration of serum and proper technique in the intravenous route.

The State Department of Health or the Chicago Board of Health are adequately equipped to render a rapid typing service so that the results of the typing are made available to physicians usually within one hour. In the past, because of too little use of serum in the treatment of pneumonia, we have not availed ourselves of the typing facilities offered by the Board of Health. It is urged that the physicians of Chicago more generally use typing and serum treatment in appropriate cases of pneumonia.

Good nursing and general medical care also are important, together with the use of oxygen in cases requiring it.

GROWTH EXTRACT MAY TURN "RUNT" INTO A GENIUS

Washington, D. C.—Hormones from the pituitary gland may be used in the near future to overcome inferiority complexes and possibly develop backward, retiring individuals into geniuses, Dr. Oscar Riddle of the Carnegie Institution of Washington said recently.

Psychiatrists declare that many persons with ability and intelligence never make full use of their mental powers because of an inferiority complex resulting from their short stature. Dr. Riddle added that "at some future time, and this may not be a distant future" it will be possible to stimulate the growth of "runts" by systematic injections of growth hormones which are normally secreted by the pituitary gland located at the base of the brain.—*Health Culture*.

CIRRHOSIS CURE

New York, N. Y.—Alcoholic cirrhosis of the liver, generally fatal, has shown indications of yielding to a diet high in Vitamin B, according to Hospital Department reports.

Thirteen cases already have been treated over a period of many months. One patient at the Research Division of Chronic Diseases on Welfare Island who was believed doomed has recovered under the new diet treatment and is ready to go back to work.—*Health Culture*.

MEDICAL ECONOMICS

H. M. Camp, M. D.
E. P. Coleman, M. D.
John R. Neal, M. D.
I. H. Neece, M. D.
W. M. Hartman, M. D.

Edited by the Committee on Medical Economics R. K. Packard, M. D.
of the Ralph Peairs, M. D.
Illinois State Medical Society C. B. Reed, M. D.
E. S. Hamilton, M. D., Chairman C. S. Skaggs, M. D.
Kankakee, Illinois C. E. Wilkinson, M. D.

Address all letters and communications to the Chairman.

The time of the annual meeting of the Illinois State Medical Society approaches so rapidly that it is high time for the members, particularly those who are Delegates, to consider carefully some of the subjects and questions which will be up for solution. As the time nears it seems that there are two or three of paramount interest and importance. With the possibility of being accused of repeating, the editor of this column, will again mention them at this time, in the hope that it will stimulate an interest on the part of the members of the House of Delegates.

One of the chief problems to be presented for definite action will be the future of the so-called Medico-Legal Committee. The action last year was necessarily temporary and the work the past year has been handicapped to some extent by the limited action taken at the 1937 meeting. The Medico-Legal Committee and the Council have given considerable time and thought to this question and will have a definite recommendation to make at the annual meeting. There is no doubt that there still is plenty of work for a committee such as this to do. Whether it might not be wise to change the name of the same to some other such as the Professional Relations Committee is a question to be decided.

The work of the Committee in the past has and should include many things other than the protection of the members of the State Society in malpractice suits. There is a great opportunity for help in avoiding such suits as well as rendering aid when suits have been started. By great odds the most service this Committee has rendered has not been measured in dollars and cents, paid for lawyers fees, but in the actual help in advise, as to what not to do as well as the things to do. Also, they have rendered invaluable assistance in bringing the facts in the case to the fellow members of the accused physician and obtaining their assistance in getting an honest just verdict. There is no doubt that

we can continue to render this service, even in view of the unfavorable action of the Ethical Relation Committee of the American Bar Association last year. All members of the House have had an opportunity to know about what has been done the past year and what is being proposed for the coming year. They should come to the annual meeting prepared to discuss the problem and decide it permanently.

Most members of the American Medical Association, when they read an article in the organization section of the J. A. M. A., under the date of February 12, 1938, in regard to the proposed survey on health facilities by component state and county societies, probably did not realize either the magnitude of the task or the cost of the same in labor and money. However, as the plan is presented to the state societies and through them to the county societies, one is struck by the extent of the survey and the labor that will be necessary to get a complete survey. In addition to the medical and dental profession, every member of which will be asked to fill out a questionnaire, every hospital, organization and industry must be contacted and a report obtained, to show the medical work they are doing, if any, and their ideas as to the nature and adequacy of the medical treatment in their community. The larger the city, the more difficult and time consuming will be the completion of this report. The cost at this time is purley guess work. How the necessary money is to be raised to make this survey is most vital and will be one of the main subjects of discussion at the annual meeting. Already the members of the Council of both the Chicago Medical and the Illinois State Medical Societies, have been at work both individually and as groups. Also some of the committees, notably the Economic Committee of the Chicago Medical Society have given time and thought to the problem. The Council had a special meeting in Chicago on May 1, 1938, to dis-

cuss this problem and try to have a definite recommendation for presentation at the annual meeting. Also there will be time for questions and explanation of the desires of the A. M. A. in the survey as well as details as to methods of conducting the same. The time and cost of completing a survey of such magnitude make this one of the major problems of the annual meeting. Whether the necessary funds will be furnished by the State Medical Society, either from reserve funds or by special assessments, or by the component County Societies from their treasury or by special assessments, is a matter of grave moment to the society both collectively and individually. It will be most interesting to see estimates as to the cost of this survey in Illinois. Equally interesting will be the reaction of the House of Delegates as to the best method of raising the money. We have little or no choice in the matter of cooperation with the wishes of the A. M. A. in the matter. They are already definitely pledged to the survey and have spent much in time, labor and money to set up the necessary machinery for the survey and failure of cooperation by component societies would lend credence to the rumor of lack of harmony within our own ranks.

The third burning question, the solution of which is necessarily dependent on the decisions arrived at in the two preceding ones is that of the amount of annual dues. It is to be hoped that every delegate will come to the meeting with an entirely open mind on this subject. The writer has no definite ideas on the subject. However, he does feel in common with the other members of the Committee that organized medicine must carry on and not allow personal feeling to make our decision in the matter of annual dues.

During the past month, a special Committee of the Council has been investigating the methods of caring for the indigents in different parts of the state as well as in Kansas and Michigan. It is hoped that they will have a report ready at the annual meeting to tell us how the medical care of the indigent is conducted in different places and advise us, if possible, as to what they consider the best method. This is a difficult problem for the size of the community, its economic prosperity, and the cooperation of the governmental officials as well as the medical profession are all of great importance in arriving at the best method for any particular community.

What works in one town will fail in another due to different conditions, entirely outside the control of the medical profession.

The daily press continues to talk about the question of medical care, the medical profession and the A. M. A. Representative B. N. Scott of California continues to demand an investigation of A. M. A. and of course the nature of medical care. He arises in defense of the HOLC in their argument about an insurance plan for medical care for the members of the HOLC. On the other hand, Senator Bridges of New Hampshire demands an end to such work by the HOLC. Report of both activities were to be found in the *Chicago Tribune* under date of April 10. It shows that the subject is still very much alive. It is heartening to learn that men like Senator Bridges are willing to come to the assistance of the medical profession even indirectly, motivated by a spirit of fair play and justice.

The Committee wish to thank the members of the state society, who have read their column the past year, particularly those who have voiced their approval and appreciation of our efforts. We trust that during the next year, the new Committee will have the same cooperation and the Column will increase in importance and value to the members of the society.

E. S. HAMILTON,

Chairman

Correspondence

MATERNAL WELFARE

The urgent demand for prompt action by the Medical Profession is clearly demonstrated by the recent conference on "Better Care for Mothers and Babies," held in Washington, D. C., on January 17-18, 1938. Here the fact was clearly set forth that according to statistics the maternal and infant death rate is higher than it should be and unless the medical profession is able to lower this rate or at least take some concerted action, then federal agencies may attempt to do so.

The Maternal Welfare Committee of the State Medical Society is made up of practicing physicians and members of the State Society who are attempting an educational program in this state and much progress has been made. In fact, few states have at this time made as much headway.

Most counties in the state have already organized. There have been meetings of the County Chairmen in five districts, viz: 4th, 8th, 9th, 10th and 11th. In these meetings representatives of the State Medical Society and the Public Health Department were guest speakers. The Illinois Department of Public Health through the Field Consultant, Harold H. Hill, is cooperating in every way. The Council of the State Medical Society forever guarding encroachment on the rights of the individual physician, has had a representative at each of the district meetings and the individual Councilors have been of great assistance in organizing their districts. The results of friendly relationship between the State Department of Public Health and the organized physicians of the state is bound to manifest itself by an efficient program.

Some counties of the state have been rather prone to disregard the importance of united action on the part of the medical profession in leading the attempt to educate the public on the medical facilities now available in their own community. There are very few districts in the state where proper medical attention cannot be given if the public is educated to consult their family physician early. The physician naturally owes it to himself and his clientele to adopt the prevailing standards of diagnosis and treatment.

This program adopted by the State Maternal Welfare Committee is bound to manifest itself in higher standards for prenatal care. As soon as the public becomes educated to the fact that through proper attention during pregnancy that the mortality rate will decrease, they will fall in line with the program then and then only will the progress in this movement become manifest.

Undue criticism of the medical profession has arisen mainly from the fact that in the past the medical man refrained from leadership in public health questions. Because of popular acclaim for better health newspaper and lay magazines are now educating the public. This education properly should have the leadership of a medical group. The Maternal Welfare Committee fully realizes this fact and with the rights of the practicing physician in mind is attempting to so complete the organization that in every county of the state there will be a group of local physicians knowing the needs of their community, ready to impress the public on their shortcomings.

Not with any idea of personal gain or advertising but with the welfare of some seven thousand physicians of the state at heart.

The plans for the summer courses in obstetrics and pediatrics are under way and full announcement of these will appear in the State Journal.

It is hoped also the future programs of the State Medical Society will devote more time to obstetrical papers. For many years this program has been crowded into a half-day at the State Meeting and the interest in obstetrical programs has been so intense that additional time appears necessary.

The Maternal Welfare Committee of the State Society, the Assistant Committeemen and the County Chairmen have been invited to attend a luncheon given by the Public Health Department of the State of Illinois on the first day of the State Meeting, Tuesday, May 17 at 12:30 o'clock at the Abraham Lincoln Hotel, Springfield, Illinois. All Chairmen are urged to make every attempt to be present, as many questions of interest may be presented and these in turn passed on to the County Medical Societies.

The State Committee urges the county chairmen to proceed as rapidly as possible with their public meetings in each county. The public meetings are being held primarily to give to the women's organizations of the county, talks on prenatal care. This being one of the major activities of the state committee, it's very important that it be carried out in full detail in each county of the state.

Speakers for these county meetings can be secured by writing Miss Jean McArthur, Secretary of the Educational Committee of the Illinois State Medical Society, 30 North Michigan Avenue, Chicago, without incurring any expense.

T. B. WILLIAMSON, M. D.
Chairman.
JOHN F. CASEY, M. D.
Secretary.

OFFICE OF THE GOVERNOR
SPRINGFIELD

April 6, 1938.

Doctor Harold M. Camp, Secretary
The Illinois Medical Society,
Monmouth, Illinois.

My dear Doctor Camp:

Heartily do I extend, through you, a cordial invitation to the members of your Society to

attend its ninety-eighth annual convention at Springfield, May 17, 18 and 19.

I understand that one of the notable features of the convention will be a Hall of Health Exhibit, open to the public. A number of State agencies, including the Department of Public



Hon. Henry Horner

Health and Public Welfare, will take part in this project.

Please accept my best wishes for a successful convention and my assurance that your members will be enthusiastically welcomed to Springfield.

Sincerely yours,

HENRY HORNER,
Governor.

REPORT OF LEGISLATIVE COMMITTEE

Since adjournment of the last General Assembly in Illinois a more conservative tone in legislative expression has developed. The business "recession" has had a sobering influence on the aggressive reformers. It has convinced a substantial element of the public as well as of their elected representatives that immediate brilliant results from the heroic experimental treatment of a very sick patient may be followed by a serious relapse which might not have occurred under more orthodox therapy of demonstrated effectiveness.

This trend is noteworthy in the national congress. Deliberation and debate on new and radical proposals are now the rule rather than the exception. Less is accepted by the lawmakers on blind faith and new theories are examined more critically in the light of past experience

than heretofore in recent years. A decided tendency toward demanding "consultation" before undertaking an exploratory operation has arisen in national affairs. The change is welcomed as a symptom of improvement.

Late in July, prior to any signs of change in the political outlook or attitude, Senator Lewis of Illinois introduced in Congress a resolution that would have Federalized all physicians, making each a civil officer and requiring him under penalty to treat at government expense all impoverished patients who might apply. Obviously impractical and fraught with grave implications with respect to the American form of government, this proposal was promptly and vigorously opposed by your Legislative Committee. Within twenty-four hours after announcement of the resolution in the newspaper a strongly worded telegram was dispatched to Senator Lewis.

Later a copy of the proposal as introduced in the Senate was obtained and studied critically. Upon this basis a set of resolutions were drawn up and adopted by the Council of the Illinois State Medical Society. Copies were forwarded to the President of the United States, to each Senator and Representative in Congress from Illinois and to the secretaries of all State medical societies. These resolutions were adopted verbatim or in principle by a majority of State medical societies and they were published widely throughout the country.

This vigorous handling of the situation undoubtedly influenced the course of the proposal in Congress. It has not been passed and there seems little likelihood that it will be revived in the near future.

During the last regular session of the Illinois General Assembly, which adjourned on June 30, 1937, numerous bills relating to medical matters were introduced. Three or four of these represented the most skillful and astute legislative maneuvering ever encountered in the Illinois General Assembly in behalf of the cults and inimical to the public interests.

A congested calendar and extraordinary confusion during the closing weeks of the session presented opportunities for tricky maneuvers quickly seized upon by the proponents of undesirable legislation. These bills included measures that would have lowered the standards of medical practice by licensing osteopaths and

chiropractors to do general work, by prohibiting indirectly the use of animals for experimental purposes, by levying a gross income tax on physicians and other professional groups, by professionalizing x-ray technicians above the level of their function in the field of medicine and in various other ways.

All of these bills were successfully opposed. While wisdom prevailed and undesirable legislation was defeated, the experience in the last General Assembly demonstrated the constant danger, especially during periods of popular unrest, of adopting impracticable and inimical laws.

Outstanding among the bills enacted was the Saltiel amendment to the marriage laws which requires prenuptial physical examinations. Good in principle, this law was poorly drawn and has proved to be unsatisfactory with respect to enforcement. Originally written without counsel from official spokesmen from organized medicine or the State Department of Public Health, it was hastily revised at the last minute when passage seemed imminent and was finally enacted in a form that leaves much to be desired. This law ought to be amended so that enforcement will be practicable. As it is, evasion of the law is easy from the standpoint of all concerned. The number of marriage licenses issued in the State has declined two-thirds since it became effective on July 1, 1937.

The legislative outlook is now more favorable than for several years. Whether this prospect continues will depend in no small measure upon an improvement in economic affairs. In any event, strong efforts at changing the course of medical practice may be expected. The pressure will merely be less violent and more conservative in tone. Those who believe in orderly evolution and who cherish the traditions of American life must be constantly on the alert if the high standards of medical practice are maintained and satisfactory progress made toward providing the American people with the best and most extensive medical care which skill and training can command.

Your Legislative Committee has enjoyed the complete cooperation and assistance of the officers of the Society and of physicians generally. This splendid relationship has made possible the successful functioning of the Committee.

LEGISLATIVE COMMITTEE

MATHER PFEIFFENBERGER, M. D., Alton.
M. J. HUBENY, M. D., Chicago.
JOHN R. NEAL, M. D.,
Chairman, Springfield.

FORMER PSYCHIATRIC PATIENTS FORM ORGANIZATION

A group of patients, most of them discharged as recovered during 1937, from the Psychiatric Institute of the Illinois Research and Educational Hospitals, of the University of Illinois, met Sunday, April 3, at the hospital and decided to form an organization of their own. The aims of the organization are:

1. To help the Physicians of the Institute to study the subsequent adjustment of the patients.
2. To engage in an educational campaign for the purpose of changing the attitude of the community toward mental disease.
3. To promote the economic interest of the former patients.

The patients plan to form an Employment Agency and to issue a Monthly Bulletin. The name of this organization is "The Association of Former Patients of the Psychiatric Institute of the University of Illinois."

MAJOR H. WORTHINGTON,
Managing Officer.

SYMPOSIUM ON COUNTY MEDICAL JOURNALS

Tuesday Evening, May 17, 1938

KENNETH H. SCHNEPP, *Chairman*
EMIL Z. LEVITIN, *Secretary*

7:30 P. M. Chairman's Address: "Proposed Regional Organization for County Medical Journals and Publications in Illinois."

Advantages of grouping existing county journals in Illinois under regional committees or chairmen. Should be more logical, economical and effective than a State-wide group at present.

Discussion opened by Charles J. Whalen.

Roll call of county journals favoring such a plan.

Election of Temporary Regional or State officers.

"The Printer-Publisher Plan of Financing a County Journal."—Emil Z. Levitin, Peoria.

How county society is relieved of financial responsibility in publishing bulletin regularly. Need of having ethical printers only to do such work. Extent of gratis circulation in adjacent counties.

Discussion opened by S. R. Hoover, Quincy.

"Results of Confidential Survey Among 52 County Societies to Determine Feasibility of State or Regional Organization."—Maurice Colehour, Rock Island.

Most societies publish monthly, and favor some type of educational committee set-up. Five promised to assist in organization meeting. Average circulation is 700, including adjacent societies. Business card not favored by majority.

NOTICE TO EXHIBITORS

The Merchants Transfer and Storage Company, 1000 East Monroe Street, Springfield, has been selected to receive all shipments sent in their care by exhibitors for the 1938 Annual Meeting. They will receive and store all exhibit materials sent to them, and will deliver same on the floor of the Exhibit Hall on Monday morning, May 16, 1938.

IOWA AND ILLINOIS CENTRAL DISTRICT MEDICAL ASSOCIATION

The annual meeting of the Iowa and Illinois Central District Medical Association will be held Wednesday, May 25 at the Outing Club in Davenport, Iowa.

The scientific program will be opened at 3 p. m. by an address on "Sulfanilamide Therapy," by Alex E. Brown, M. D., of Rochester, Minn. At 4 p. m., D. B. Phemister, M. D., professor of surgery at the Albert Billings Memorial Hospital and the University of Chicago will deliver an address on "The Use of the Bone Graft in the Treatment of Bone Tumors." At 5 p. m., J. H. Means, M. D., professor of medicine at Harvard University, Boston, will deliver an address on "The Commoner Deficiency Syndromes found in a Medical Clinic."

Dinner will be served at 6 p. m.

At 8 p. m. two members who have completed fifty years in practice will be honored, George B. Maxwell, M. D., of Davenport, Iowa, and G. A. Wiggins, M. D., of Milan, Illinois.

At 8:30 p. m., a member, Anton Knutson, M. D., of Reynolds, Illinois will deliver a lecture accompanied by motion pictures, "Hunting Big Game in Africa." Dr. Knutson spent six months on his hunting expedition in Africa in 1937.

SYMPOSIUM ON MENTAL HEALTH

Plans are in the making for a Symposium on Mental Health to be presented before the Section on Medical Sciences of the American Association for the Advancement of Science at Richmond, Virginia, December 28-30, 1938.

Collaborating in the enterprise are the American Psychiatric Association (an affiliated body of the A.A. A.S.), the United States Public Health Service, the Mental Hospital Survey Committee (composed of eight national medical bodies), the National Committee for Mental Hygiene, and a special committee of eminent psychiatrists who are developing the program for the Symposium under the chairmanship of Dr. Walter L. Treadway, Assistant Surgeon General of the Public Health Service in charge of mental hygiene activities.

Communications should be addressed to Symposium on Mental Health, American Association for the Advancement of Science, Room 822, 50 West 50th Street, New York City.

HEADQUARTERS SEVENTH CORPS AREA

OFFICE OF THE SURGEON

Omaha, Nebraska,
March 29, 1938.

Subject: Inactive duty training for Medical Department Reservists with the St. Louis Clinics.

To: All Medical Department Reservists, Army and Navy, 7th Corps Area.

1. The annual Post Graduate Course and Clinical Conference given by the St. Louis Clinics will be held in St. Louis, Missouri, May 23 to 28 inclusive. A cordial invitation is extended to Medical Reservists of the Army and Navy. This office urges you to attend.

2. An excellent program has been arranged and a large enrollment is expected.

3. Fees.

a. *The regular enrollment fee of \$10.00 is waived for Reserve Officers.*

b. *Actual expense:* A fee of \$2.50 will be charged Reservists to cover the cost of the dinner honoring the Corps Area Commander, postage, and other incidentals.

4. Appropriate military credits will be given for attendance.

KENT NELSON,
Colonel, Medical Corps,
Surgeon.

ASSOCIATED HARVARD CLUBS

MEDICAL SEMINAR

The Medical School Seminar at the 41st Annual Meeting of the Associated Harvard Clubs to be held at the Palmer House, Chicago, Illinois, on May 20, 21 and 22 next, promises to be an outstanding feature of the meeting. It will mark Dr. Burwell's first visit to Chicago in his official capacity as dean. The program is as follows:

The Harvard Medical School in 1938—Dr. C. Sidney Burwell, Dean and Research Professor of Clinical Medicine (20 min.)

Trends in Pre-clinical Teaching—Dr. A. Baird Hastings, Hamilton Kuhn Professor of Biological Chemistry. (15 min.)

The Tutorial System in the Harvard Medical School—Dr. Walter Bauer, Associate Professor and Tutor in Medicine. (15 min.)

The Surgical Curriculum Today—Dr. Elliott C. Cutler, Moseley Professor of Surgery. (15 min.)

Discussion.—Dr. Joseph T. Wearn, Professor and Head of the Dept. of Medicine, Western Reserve University, Cleveland; Mr. Laird Bell, Chairman of the Educational Committee, Board of Trustees, University of Chicago.

The Seminar will begin at 2:30 p. m. on Saturday, May 21, immediately following a joint luncheon of all the schools beginning at 12:30 p. m., during which Frederick Roy Martin and William Allen White will speak briefly.

All graduates of the University are invited to attend. A limited number of admission cards are available for non-Harvard men who are particularly interested in medical education. These may be obtained by writing to Willard O. Thompson, M. D., Chairman of the Medical School Committee, 700 North Michigan Avenue, Chicago, Ill.

COLLEGE OF MEDICINE, UNIVERSITY OF ILLINOIS

Grant: The John and Mary Markle Foundation of New York City, has made a grant of \$10,000 for a three year period to carry on research work on neurophysiology under the supervision of Dr. Ernest Gellhorn, Professor of Physiology in the College of Medicine of the University of Illinois.

Lectures: Arvid Lindau, Professor of General Pathology and Bacteriology, University of Lund, delivered a lecture at the College of Medicine of the University of Illinois, on Wednesday April 6, at 1 p. m., on the subject, "Pathogenesis of Peptic Ulcer." This was one of the Swedish Tercentenary Lectures sponsored by the American Scandinavian Foundation. These lectures are being given in the United States during the academic year 1937-1938 in celebration of the 300th anniversary of the founding of New Sweden, the first colony established on the Delaware.

Dr. F. G. Benedict, Director of the Nutrition Laboratory of the Carnegie Institute, delivered a lecture at the College of Medicine on Friday, March 4, at 1 p. m., on the subject, "Animal Metabolism—Mouse to Elephant." This lecture was sponsored by the National Society of Sigma Xi and was held under the auspices of the Graduate School of the University of Illinois.

Dr. W. M. Stanley of the Rockefeller Institute, delivered a lecture at the College of Medicine on Thursday, April 7, at 3 p. m., on the subject, "Recent Advances in the Study of Viruses." This lecture was held under the auspices of the National Society of Sigma Xi.

Dr. Maud Slye of the University of Chicago will deliver a lecture at the College of Medicine on Wednesday, April 27, at 1 p. m., on "Studies in Cancer." This lecture will be given under the auspices of Alpha Omega Alpha, honorary medical fraternity.

Improvements: The Board of Trustees of the University of Illinois has appropriated \$5,000 for the shelving and equipment to provide additional facilities for the housing of the Hertzler and Pusey gifts to the Medical Library. The Hertzler collection consists of

7,000 volumes and 8,000 separates on surgery and surgical pathology; the Pusey collection consists of 1,500 selected books and numerous separates and reports in the field of Dermatology.

A program of physical education for students in the colleges of Medicine, Dentistry, and Pharmacy, is being promoted. Two tennis courts and an athletic field have been provided. Tennis, soft ball, horseshoes, archery, fencing, and swimming are now offered to the students.

Art Work: Artist, under a WPA Art Project, are at present working on the statues of Aesculapius and Hygieia. These statues are to be erected in the archways between the Library of the College of Medicine and the Educational and Research Hospital. Certain expenses in connection with the erection and installation are being met by the University and by the Alumni and Alumnae of the College of Medicine.

WANTED: Back numbers of the Journal. We have several requests from libraries for the March, 1937, issue. We have also many requests on file from universities and libraries for all numbers and volumes of the ILLINOIS MEDICAL JOURNAL issued previous to 1916. Communicate with us at 6221 Kenmore Avenue, Chicago, Illinois.

REMOVING ADHESIVE PLASTER

For the painless and most satisfactory removal of adhesive plaster, it should be thoroughly moistened with "KARITH CLEANING FLUID." Karith Cleaning Fluid is quick and effective. It does not contain carbon tetrachloride. Its use is not accompanied by the odor of unpleasantness and danger common to carbon tetrachloride type products.

Karith Cleaning Fluid is manufactured by the Karith Chemical Company of Chicago, Illinois, and is carried by drug stores.—J. W. W., Ill. Med. Jour., Nov., 1936.

WHAT YOU SHOULD KNOW ABOUT TUBERCULOSIS

Two booklets on tuberculosis, one for the patient and the other for the "doctor of the future," will be made available this spring by the National Tuberculosis Association and its affiliated groups throughout the country to senior students in Grade "A" medical schools. Dr. Kendall Emerson, Managing Director of the National Association, has announced that this is part of the service of the tuberculosis groups to carry on their educational activities among the physicians, as well as among the general public.

"To the credit of the American doctor," the booklet for students says, "the record shows that he has from the beginning of the organized fight against tuberculosis generously joined hands with the non-medical crusade fully agreeing with him that tuberculosis is not merely a disease of certain tissues but a social problem of first magnitude. This fine record should forever silence the criticism that doctors' interests are too narrowly limited to sick organs."

In its message to the students, the National Tuberculosis Association says, "The hope of eradicating

tuberculosis lies in the hands of doctors of tomorrow."

"What You Should Know About Tuberculosis," is the title of the booklet written for the patient. It is an interpretative booklet, offered as an aid to the physician in guiding his patient. Its tone is optimistic and the language is simple.

VALUE AND DANGER OF FUMIGATION

A recent release from the State Department of Health has the following relative to fumigation:

Formerly a routine practice at the termination of quarantine but now limited almost entirely to efforts at the destruction of household pests, fumigation is much more effective as well as more dangerous than heretofore. Regarded as of little or no value in the direct control over disease germs, fumigation properly done will destroy in short order such insects and rodents as are likely to be encountered in the traditional clean-up activities of the spring season.

Cyanide in some form is perhaps the most satisfactory fumigant generally available but it must be used with care and caution to avoid human tragedy. It may be had as liquid hydrocyanic acid or in solid form as calcium cyanide, the latter varying from 45 per cent to 95 per cent in strength. The best plan, all things considered, is to employ an experienced fumigator to handle a job. Printed instructions should be followed carefully when one attempts to do his own fumigating.

The time required and the effectiveness of fumigation depends upon the concentration of gas which can be brought about and this in turn, depends upon the fumigant used, the air-tightness of the quarters, the temperature and the character of the pests under attack. One ounce of liquid hydrocyanic acid or of full strength calcium cyanide per 1,000 cubic feet of space will kill fleas in one hour. Two ounces for two hours kills rats and mice. Four ounces for two hours kill lice and bedbugs. Eight ounces for eight hours kill cockroaches. Somewhat greater doses will be required if rooms cannot be sealed reasonably well.

The chief danger to humans is gas that may have been absorbed by pillows, mattresses and bedclothing because less precaution is apt to be taken against this risk. Gas escaping slowly from such sources may asphyxiate a sleeping person or raise dangerously the concentration in a room previously aired and closed. A human may fall unconscious after but one or two breaths of air heavily charged with hydrocyanic acid while with lower concentrations the effects come on more gradually.

WHY DRUGGISTS PRESCRIBE

The best pharmacists do not prescribe for their patients. Physicians have maintained that the best interests of the patient demand that prescribing be done by medically trained persons only; the ethical pharmacist should limit himself to compounding and purveying. If any one believes seriously that counter prescribing is not a standard trade practice in drug stores, attention should be called to an article in the November, 1937, issue of the *American Druggist* under the title "A

Billion Dollar Sneeze."¹ This article presents many correct, pertinent and useful facts about colds, their infectiousness, the relation of metabolism and exposure to their occurrence, their cost, and what science knows about their prevention. Then tucked away at the end, next to advertisements of Adex Tablets and Smith Brothers' Cough Drops, are five steps to cold prevention by means of which the druggist is assured "your preventive products sales will increase." The first step is vitamins. "Science," it seems, has proved "that the vitamin A and D content of these (fish liver) oils helps in the treatment of colds, the laity terminology being that they help build up the resistance." The Council on Pharmacy and Chemistry does not allow such claims, but the council is not a sales organization. The second step is a laxative! "The laxative treatment you recommend can be a 10c item or a \$1.25 sale. . . ." The third step has to do with sales possibilities in nose drops, jellies, sprays and inhalants, and the fourth step cashes in on "any one of a number of mouth washes and gargles." In the fifth step the customer gets over on the alkaline side with milk of magnesia, antacid powders and tablets. And the climax:

Clerks should be taught the practical advantage of solicitous inquiries about the customer's symptoms. Muscular pains, sore throat, headache, clogged nasal passages, chills, chest pains, and coughs each may be the basis for the sale of a product over and above what the customer came in to buy . . . get your share of this billion dollar business . . . and you will make money out of sneezes and sniffles in 1937-38 . . . Ah-choo.

So pharmacy à la the *American Druggist* is a science and a profession. The science is salesmanship—but the profession is the practice of medicine. And for practicing medicine the druggist needs a license in medicine.

1. A Billion Dollar Sneeze, *Am. Druggist*, November, 1937, p. 24. J. A. M. A.

MASS ASSAULT CAN MOVE MOUNTAINS

"To abstain from medical activities under present menacing conditions is a wasteful squandering of that valuable asset of good teamwork at the very time when collaboration is absolutely vital. One does not change horses in the middle of the stream. When out in mid-ocean in a storm you do not see anybody shoving off in a rowboat by himself to save passenger money. Present conditions make mass action imperative and mass assaults can move mountains. Few, if any, can deny need for maintenance by the medical profession of the strongest possible organization—strong in numbers, militant in spirit and untiring in its concerted efforts to protect the interests of the medical profession and in so doing the interests of the community."—Charles J. Whalen.

A NEW GARMENT

"Eliza," said a friend of the family to the old colored washerwoman, "have you seen Miss Edith's fiance?"

Eliza pondered for a moment, then bent over the laundry tubs once more. "No, ma'am," she said, "it ain't been in the wash yet."

THE ILLINOIS STATE MEDICAL SOCIETY

Cordially invites you to attend its

Ninety-Eighth Annual Meeting

Knights of Columbus Bldg, Springfield, Illinois

May 17, 18, 19, 1938

PROGRAM SUMMARY

Tuesday, May 17

9:00 A. M.—

1. Secretaries' Conference.
2. Conference on Diseases of Children.
3. Conference on Obstetrics and Gynecology.
4. Central States Society of Industrial Medicine and Surgery.
5. Physicians Association—Department of Public Welfare, Annual Meeting.
6. Section on Eye, Ear, Nose and Throat.

1:00 P. M.—Opening Meeting, Illinois State Medical Society.

1:30 P. M.—Oration in Medicine. George Draper, Associate Professor of Medicine, Columbia University College of Physicians and Surgeons, New York.

2:30-5:00 P. M.—Meetings of all Scientific Sections.

3:00 P. M.—First Meeting—House of Delegates.

7:00 P. M.—Veterans Service Committee Dinner and meeting.

9:00 P. M.—The Stag.

Wednesday, May 18

9:00 A. M.—Joint session of Sections on Medicine, Surgery, and Radiology.

Section on Eye, Ear, Nose and Throat.

11:00 A. M.—Oration in Surgery. Irvin Abell, President-Elect, American Medical Association, Clinical Professor of Surgery, University of Louisville School of Medicine, Louisville, Ky.

1:30 P. M.—President's Address. R. K. Packard, President, Illinois State Medical Society, Chicago.

2:30 P. M.—Meetings of all Scientific Sections.

7:00 P. M.—President's Dinner.

Thursday, May 18

9:00 A. M.—Joint Session of all Scientific Sections. Second Meeting of the House of Delegates. Induction of President-Elect, immediately before closing of House of Delegates Session.

Registration will begin at 8:00 a. m. Tuesday, May 17, and continue throughout the meeting. All visiting physicians are welcome, and a Guest Badge will permit you to attend any meeting.

POINTS OF INTEREST IN SPRINGFIELD



Abraham Lincoln Hotel—Headquarters



Elks Club—Hall of Health Exhibit



Knights of Columbus Building



Illinois State Capitol



Lincoln's Home

Lincoln-Berry Store
New Salem





At Left—Dr. John Allen
Residence, Old Salem

Below—Lincoln Tomb and
Lake Springfield



SPRINGFIELD

Springfield, Illinois, "The Home of Abraham Lincoln" and the capitol of Illinois, is centrally located in the state 185 miles southwest of Chicago and 99 miles northeast of St. Louis. It is located on the Sangamon River. It is served by the Baltimore & Ohio-Alton, the Chicago & Illinois Midland, the Illinois Central, the Wabash, and the Chicago, Springfield & St. Louis railroads, and the Illinois Terminal System electric interurban lines.

The city population is approximately 75,000 with more than 10,000 inhabitants residing in the suburban territory. Springfield has one of the largest artificial lakes in the state 15 miles in length, and with a storage capacity of 21,400,000,000 gallons of water. The lake is now well filled with water and will serve its purpose of furnishing an adequate water supply for this area for years to come.

The State Capitol completed in 1887 is Springfield's most prominent building, the dome is 361 feet in height. The Illinois Supreme Court Building, the new \$2,000,000 Federal Building, the new Arsenal, the Illinois Centennial Building, and dozens of fine clubs, hotels, banks, office and mercantile buildings, are among the other important show places of this city.

The large parks, Washington, Lincoln, Bunn, Pasfield and Carpenter, comprise a total area of more than 650 acres, and they are well equipped modern parks in which are provided athletic fields, tennis courts, swimming pools, and three golf courses.

The connection of Lincoln with the history of Springfield started about 1837 when he moved to this city from New Salem and established a law partnership with John T. Stuart. Lincoln maintained his connections with Springfield until the time of his death at the close of the Civil War and the only home which he ever owned is in this city, located at Eighth and Jackson Streets.

Also connected with the early history of Springfield was General U. S. Grant who began his military career in the Civil War by being made Colonel of the 21st Illinois Infantry in Springfield. Stephen A. Douglas was a familiar figure in early Springfield.

In Oak Ridge Cemetery is a splendid gray granite monument erected to the memory of Abraham Lincoln. The lower part of this is a mausoleum containing the remains of the Great

Emancipator and members of his family. In the center rises a shaft 121 feet high. At its base in front is a statue of Lincoln, and at the four corners are groups of statuary symbolizing the cavalry, navy, artillery and infantry of the United States. This monument, which originally cost about \$350,000 contributed by the people from every part of the United States, was designed by the sculptor Larkin G. Mead and was dedicated in 1874.

The Lincoln Monument was remodeled by the state of Illinois during 1930-1931, at an expense of over \$125,000. While its outward appearance was not changed, it was completely rebuilt, and extensive interior changes were made. It was dedicated with appropriate ceremonies by President Herbert Hoover, June 17, 1931.

Lincoln's old home is owned by the State and is open to the public. Each year hundreds of thousands of people, coming from every state in the Union and from every civilized nation on earth, visit the Lincoln Home and the Lincoln Tomb, and other points connected with his associations.

The present Sangamon County Court House was formerly the Capitol Building of the State, being the second building erected for that purpose. In it Lincoln made a number of his noted addresses, including his historic "House Divided Against Itself" speech.

Springfield, settled in 1819, was organized and made the county seat in 1823, and was incorporated as a town and made the state capitol in 1837. It became a city in 1840. The commission plan of government was adopted in 1911.

The fact that Springfield is situated near the center of population of the United States in the midst of the greatest corn-growing belt in the world, with fine transportation facilities and an abundance of coal supplies, is causing a steady growth in population and in industrial importance.

GOLF TOURNAMENT

There will be a golf tournament held at the Illini Country Club on Tuesday Morning, May 17, for the doctors attending the Annual Meeting of the State Medical Society. Suitable prizes will be awarded.

For any information, write to Dr. Fred P. Cowdin, Chairman, Golf Committee, Springfield, Illinois.

THE STAG

WHEN?—Tuesday Evening, May 17, 1938, at 9:00 o'clock.

WHERE?—Roof Garden, Elks Club.

NATURE?—An evening of good entertainment—opportunity for relaxation and to renew old friendships.

THE COST?—Admission by ticket only, the tickets presented at the registration booth to all men who register—and it is free.

FOR MEN ONLY!—DON'T FORGET
THE STAG!

PRESIDENT'S DINNER

For many years at the annual meetings of the Illinois State Medical Society, Wednesday evening is devoted to the honoring of the President of the Society. The President's Dinner will be held at the Hotel Abraham Lincoln, at 7:00 P. M. Wednesday, May 18. Every member and guest at the meeting should endeavor to attend this highly interesting function.

Dr. Rolland L. Green, Immediate Past-President, will officiate as Toastmaster at the Dinner. All Past-Presidents are invited guests of the Society.

Elaborate plans are under way for a highly successful President's Dinner with good food, entertainment, and no long speeches. During the evening, the Chairman of the Council, E. P. Coleman, will present Dr. Packard with the President's Certificate.

Following the Dinner, Dancing or Bridge, according to the desires of the guests, will be on the program.

All members and guests should unite in honoring Dr. R. K. Packard, President of the Illinois State Medical Society, on Wednesday Evening, May 18, 1938.

GENERAL SESSIONS

OPENING MEETING

Columbus Hall

Tuesday Afternoon, May 17, 1938

1:00 Ninety-Eighth Annual Meeting officially opened by the President, R. K. Packard, Chicago.

1. Invocation—

Rev. Walter E. Cremeans, Pastor
Westminster Presbyterian Church,
Springfield.

2. Address of Welcome—

Hon. John W. Kapp, Jr., Mayor of
Springfield.

3. Address of Welcome—

Robert K. Campbell, President of the
Sangamon County Medical Society,
Springfield.

4. Report of Chairman, Committee on Arrangements, Harry Otten, Spring- field.

5. Adjournment for Oration in Medi- cine.

1:30 Oration in Medicine. "Individual Disease" George Draper, Associate Professor of Medicine, Columbia University, College of Physicians and Surgeons, New York.

Wednesday Morning, May 18, 1938

11:00—Oration in Surgery. "Breast Tumors" Irvin Abell, President-Elect, American Medical Association, Clinical Professor of Surgery, University of Louisville, School of Medicine, Louisville

Wednesday Afternoon, May 18, 1938

1:30 President's Address—"Inter Responsibilities of the Medical Profession, Society, Industry and Government". R. K. Packard, President, Illinois State Medical Society, Chicago.

Thursday Morning, May 18, 1938

Induction of the President-Elect.

Immediately after the closing of the meeting of the House of Delegates, S. E. Munson will be inducted into the office of President of the Illinois State Medical Society by the retiring President. All members and guests are urged to attend this interesting function.

Veterans' Service Committee Dinner

The annual dinner of the Veterans' Service Committee will be held at the Leland Hotel on Tuesday Evening, May 17, at 6:00 P. M. Dr. F. O. Fredrickson, Chairman of the Committee, will officiate as presiding officer. All physicians are invited.

SYMPOSIUM

If War Should Come

What Role Would the Medical Profession Play?

PROGRAM

- 1—Presentation of Colors
Commander, Springfield American Legion Post.
- 2—Bugle: To the Colors
Carl Steinhoff, M. D.
- 3—Opening Remarks
Norman D. Sheeche, M. D., Department Surgeon, American Legion.
- 4—Remarks
Mr. Leonard Applequist, Department Commander.
- 5—"Standpoint of the National Guard" (20 minutes)
Col. James J. McKinley, Commanding Medical Regiment, 33rd Division, I.N.G.
- 6—"Standpoint of the Reserve" (20 minutes)
Col. George DeTarnowsky.
- 7—"Standpoint of the Regular Army" (20 minutes)
Lt. Col. Benjamin A. Brackenbury, Chemical Warfare Service, U.S.A. U. S. Postoffice, Chicago.
Moment of Silence.
Retirement of Colors.

Women Physicians' Activities

The Medical Women plan to have the following program during the annual meeting of the Illinois State Medical Society:

Tuesday, May 17, 1938

12:15 p. m., Luncheon—Leland Hotel.

"Clinical Problems in a Women's Reformatory"—Eva Wilson, Medical Director. Women's Reformatory, Dwight, Illinois.

6:30 p. m., Banquet—Leland Hotel.

"Bronchoscopic Examination as a Prophylactic in Pulmonary Disease"—With lantern slides. Nora Brandenburg, University of Chicago, Chicago, Illinois.

"Human Cancer Records"—Maude Slye. University of Chicago, Chicago, Illinois.

Wednesday, May 18, 1938

7:30 a. m., Breakfast—Leland Hotel.

"Five Decades in Medicine"—Rhoda Gallo-way-Yolton, Bloomington, Illinois.

12:15 p. m., Luncheon—Leland Hotel.

"Clinical Problems in Hemophilia"—With lantern slides. Carroll Birch, University of Illinois College of Medicine, Chicago, Illinois.

Thursday, May 19, 1938

7:30 a. m., Breakfast—Leland Hotel.

"Report of Edinburgh Meeting Medical Women's National"—Lillian Rich, Pekin, Illinois.

Our programs will be interesting and brief and will allow you ample time to attend all the regular sessions of the Illinois State Medical Society. We hope you will attend and help us become better acquainted with each other and our work.

All physicians are requested to meet as soon after 12:00 noon as possible so that we may adjourn in time to attend the regular sessions of the State Society.

Woman's Auxiliary Program

All general meetings and social activities are open to all doctors' wives.

Monday, May 16, 1938

1:00 P. M. Registration, Abraham Lincoln Hotel.

Tuesday, May 17, 1938

8:30 A. M. Pre-Convention Board Breakfast and Pre-Convention Board Meeting. Home of Mrs. H. B. Henkel, 2135 Wiggins Avenue.

9:00 A. M. Registration.

11:00 A. M. Round Table Discussions, Leland Hotel. Mrs. C. C. Winning, Chairman.

12:30 P. M. Public Relation Luncheon, Leland Hotel.

2:00 P. M. General Meeting, Abraham Lincoln Hotel.

4:30 to 5:30 P. M. Mansion Tea—Host, Hon. Henry Horner, Governor.

7:00 P. M. Bridge Dinner, St. Nicholas Hotel.

Wednesday, May 18, 1938

8:30 A. M. Board Breakfast, Downstate Members Hostesses, Abraham Lincoln Hotel.

9:30 A. M. General Meeting, Abraham Lincoln Hotel.
Memorial Services, Mrs. Lucius Cole, Chairman.

1:00 P. M. President's Luncheon, Abraham Lincoln Hotel.

Social Functions for All Ladies

Tuesday, May 17, 1938

12:30 P. M. Noon Luncheon, Leland Hotel.

4:30 to

5:30 P. M. Tea at Executive Mansion.

7:00 P. M. Bridge Dinner at St. Nicholas Hotel.

Wednesday, May 18, 1938

1:00 P. M. Luncheon, Abraham Lincoln Hotel.

7:00 P. M. President's Dinner and Dance. Cards. Abraham Lincoln Hotel.

Secretaries' Conference

John W. Long, *Chairman*.....Robinson

D. D. Monroe, *Vice-Chairman*.....Alton

A. R. Brandenberger, *Secretary*.....Danville

Tuesday Morning, May 17, 1938

Community Hall

9:00—12:00

In the program as here presented, there is no particular mention made of "State Medicine." Your secretary believes that the program should be of interest to all. It is agreed, as stated by Dr. Morris Fishbein, that the county medical society is the most important unit in the medical organization, and that the various county medical societies can do more toward warding off "State Medicine" than any other group. To this end, we must consider our business meeting as paramount, we must cooperate with the legislative committee, and we must endeavor to educate the public along certain lines. The future of our organization will then be assured.

A. R. BRANDENBERGER, *Secretary*.

"Medical Care for All of the People".....

.....R. K. Packard, Chicago

There has been much discussion regarding medical care for all of the people written by various groups and organizations during the past few years.

In the time allotted for this discussion I desire to discuss the survey to be made by the County Medical Societies as outlined by the A. M. A. This survey should show actual medical needs and facilities for furnishing medical care and whatever, if any, deficiency exists at the present time.

Plans now in operation under the direction of County Medical Societies will be briefly discussed.

Discussion opened by E. S. Hamilton, Kan-kakee.

"The Importance of the Business Meeting"...

.....R. T. Pettit, Ottawa

Ordinarily the reading of the minutes and the business session of the average County Medical Society receive scant attention from either the secretary, or the society itself.

In these days of increased economic pressure, the

business organization of the County Medical Society is one of its important functions, particularly as it deals with the determination of policies, etc., to be followed by the Society with relation to hospitals, other groups, and the community at large. A discussion of Group Hospitalization Insurance may be cited as an example.

Discussion opened by C. W. Magaret, Peoria.
"How the County Medical Society Can Help the Legislative Committee".....

.....John R. Neal, Springfield

A brief resume of types of legislation in relation to the practice of medicine is presented. The need of co-operation of members and officers of every County Medical Society is explained. A general discussion of legislative trends pertaining to the practice of medicine is presented.

Discussion opened by W. H. Schowengerdt, Champaign.

"Education of the Public by the County Medical Society".....W. W. Bauer, Chicago

The discussion here takes up the difference in education of the public about health and medicine. It is the belief of the speaker that the laity should be educated along the line of health. To this end, there are four definite means; (a) the radio, (b) the speaker's bureau, (c) the press, and (d) the pamphlet. Advantages and disadvantages of each are discussed.

Discussion opened by T. B. Knox, Quincy.

"The Work of the Educational Committee"...

.....J. H. Hutton, Chicago

This paper presents a brief history of how the Educational Committee came into being, and the vague instructions given its members. Early financial difficulties and management are discussed. The early difficulties of securing the friendly cooperation of some lay groups, and the changes that have come about in their attitude, as well as our own, are brought out. A statistical summary of some of the committee's activities and a statement of its present position, is presented.

Discussion opened by Harlan English, Danville.

"The Future of the County Medical Society"

.....S. E. Munson, Springfield

This paper takes up first, the importance of membership of every eligible graduate of a medical school. The choosing of the secretary and other officers is then considered. The relationship of the officers of the county medical society to other civic groups is discussed, in so far as the organizing and co-ordination of the medical profession is concerned. The responsibility of the County Medical Society to the public, the American Medical Association, and to other groups must be fulfilled if the haunting ghost of socialized medicine is to disappear.

Discussion opened by C. S. Skaggs, East St. Louis.

A Conference on Diseases of Children

Jos. K. Calvin, *Chairman*Chicago

Gerald Cline, *Vice Chairman*.....Bloomington
H. W. Elghammer, *Secretary*.....Chicago

Tuesday Morning, May 17, 1938

Columbus Hall

SYMPOSIUM ON THE NEW BORN

9:00—"Feeding and Care of the Premature
New Born".....Julius H. Hess, Chicago

Conditions under which intra-uterine life can be prolonged. The needs for special care during the neonatal period. Breast and artificial feeding and general care during the early weeks of life. Emergency therapeutic measures as indicated by clinical pathology. Physical and mental development, as experienced in a group of 2,700 cases.

Discussion opened by T. F. Krauss, Rockford;
and S. C. Henn, Chicago.

9:45—"Cyanosis in the New Born".....

.....A. H. Parmelee, Oak Park

Cyanosis in the newborn may be due either to respiratory, or circulatory disturbances. The adjustments in the respiratory and circulatory mechanisms that need to be made in the transition from intrauterine to extrauterine existence are closely inter-related.

Cyanosis may result from asphyxia neonatorum, from atelectasis, or from suffocation due to aspiration of mucus or other fluids. It may also be due to primary circulatory defects, and, not infrequently, to intracranial birth injuries which involve the respiratory center.

Cyanotic attacks occur with unusual frequency in premature infants, and often late in the neonatal period: these are not easy to explain.

The various types of cyanosis and the accepted methods of treatment will be discussed.

Discussion opened by Carl E. Sibilsky, Peoria;
and Louis Minsk, Chicago.

10:30—"Feeding During the New Born
Period".....Gerald M. Cline, Bloomington

The entire discussion is centered around three people:
The Baby, Mother and Doctor.

The normal new born and its problems are differentiated from those of the pathological new born.

From birth to one month of age is considered as the new born period, for usually by that time the grosser possibilities of congenital conditions are generally ruled out. Other problems are pretty well classified and under control.

Practicability is the keynote of managing the new born, with the end result of a happy, satisfied growing baby, who becomes a physical satisfaction to the doctor employed and the joy of a new possession to the mother.

Discussion opened by Ray C. Armstrong,
Champaign; and John McDavid, Oak Park.

11:15—"Icterus and Anemia in the New
Born".....Walter M. Whitaker, Quincy

A discussion of the various types and etiologic factors concerned in the production of both anemia and icterus in the new born, with a description of the clin-

ical and laboratory aids which should be used in arriving at the correct diagnosis.

Discussion opened by Gerard N. Krost, Chicago; and John Carey, Joliet.

PEDIATRIC PAPERS BEFORE OTHER SECTIONS

Tuesday Morning, May 17, 1938

Section on Eye, Ear, Nose and Throat

"Pediatric Treatment of Otologic Sepsis, Including Meningitis".....Philip L. Aries, Chicago

"Cleft Palate and Lip".....L. W. Schultz, Chicago

Tuesday Afternoon, May 17, 1938

Section on Public Health and Hygiene

"Hemolytic Streptococcus Cultures and the Dick Test in Relation to Scarlet Fever".....

.....John A. Bigler, Highland Park

"The Value of One Injection of Alum Precipitated Toxoid in Controlling Diphtheria"

.....C. H. Benning, Peoria

"An Attempt at the Laboratory Control of Scarlet Fever by Hemolytic Streptococcus Cultures".....Martin H. Seifert,
Commissioner of Health, Wilmette.

Section on Radiology

"Radiologic Aids in the Diagnosis of Heart Disease in Children".....

.....Edmund G. Lawler, Chicago

Wednesday Morning, May 18, 1938

Section on Surgery

"Intussusception".....Philip Rosenblum, Chicago

Section on Eye, Ear, Nose and Throat

"Nasal Septum Surgery in Children".....

.....M. H. Cottle, Chicago

"Management of Cross Eyes".....

.....W. A. Fisher, Chicago

Wednesday Afternoon, May 18, 1938

Section on Eye, Ear, Nose and Throat

"Acute Laryngitis in Infants".....

.....Glenn J. Greenwood, Chicago

Thursday Morning, May 19, 1938

Section on Medicine

"Pneumonia in Childhood".....

.....James B. Gillespie, Urbana

"Intradermic Immunization Against Scarlet Fever".....C. A. Earle, Des Plaines

Obstetricians' & Gynecologists' Meeting

F. L. Heinemeyer.....*Chairman*

Wm. T. Carlisle.....*Secretary*

Tuesday Morning, May 17, 1938

Gymnasium

1—"Progress in Maternal Welfare".....

.....Harold H. Hill, Oak Park

Some statistics contrasting the maternal death rates in the past decades will be given and compared with those of recent years.

The special programs offered this year will be mentioned with reference to attendance, location, etc.

The organization of the State Committee on Maternal Welfare, its policies and plans will be discussed. There will be some reference to the lay and nursing educational programs also.

2—"Pre-Natal Care".....W. C. Danforth, Evanston

The safety of the expectant mother can be increased by care during pregnancy. General physical and pelvic examination discloses systemic or pelvic abnormality. Pelvic measurement is established beyond the need for argument. Although abortion may not be prevented, at least something may be done to decrease the number. Calcium therapy is often important. Many pregnant women are anemic. Hypothyroidism frequent and often needs care. Dental attention is important. Constant observation of arterial tension is essential. Control of weight increase by diet and observation of weight is nearly if not quite as important as observation of blood pressure. A routine Wassermann should be done; if positive, treatment is best carried out by syphilographer. Thorough prenatal care foresees some complications and prevents others. It should be given every pregnant woman.

Discussion opened by Ralph R. Loar, Bloomington.

3—"Obstetric Diagnosis".....

.....David S. Hillis, Chicago

The methods now in use to recognize disproportion between the head and the pelvis are difficult and unsatisfactory. A simple procedure is described which is designed to measure the pelvis with the head that is to pass through it. When used as a routine before and during labor, it will enable the attendant to know positively in about 95% of cases that the head can pass through the pelvis. Among the remaining 5% are those cases of disproportion which can be conducted in such a manner that Caesarian section may be done before the time has passed for safe delivery by the abdominal route.

Discussion opened by Wm. Cooley, Peoria.

4—"Myomectomy During Pregnancy".....

Ralph A. Reis and Melvin B. Sinykin, Chicago

The overwhelming majority of fibroids complicating pregnancies require no treatment. A small group must be removed because of size, location, infection, twisted pedicle or other acute degenerative changes. A series of 16 requiring removal during pregnancy for these causes is recorded. Age, parity, duration of pregnancy, symptoms, indications, location, gross and microscopic findings are analyzed. Fifteen patients carried the pregnancy to term and one aborted following operation. Myomectomy during pregnancy is, therefore, a com-

paratively safe procedure for both the mother and the fetus and should be performed whenever indicated.

Discussion opened by Wm. O. McQuiston, Peoria.

5—"Postnatal Complaints in 1000 Consecutive Cases".....Wm. A. Simunich, Chicago

An enumeration and discussion of the subjective symptoms of the puerpera during the lying in period. The symptoms are divided into those due to labor and those not related to it. It is evident that a puerpera may suffer from any condition that a non-puerperal woman may have in addition to those complaints peculiar to this period. Of interest is the fact that of 29 primiparae having after pains only one gave a history of previous abortion while 50% had a profuse lochia. Cracked nipples are caused by vigorous efforts of the baby to obtain nourishment from a poorly secreting breast.

Discussion opened by Otto H. Crist, Danville.

6—"Endocrine Therapy of Menopausal Disorders".....Phillip F. Schneider, Evanston

Availability of estrogenic preparations of high concentrations in addition to more accurate methods of control have increased the efficacy and scope of menopausal therapy. Consideration of the principles involved, the symptomatology and the clinical results suggest a method of therapy providing in general more rapid symptomatic relief and insuring greater possibility of permanent control. Prophylactic treatment of surgical menopause is suggested and the dangers of cancer production as a result of estrogenic therapy is considered.

Discussion opened by Fred S. Stahmann, Peoria.

7—"Tuberculosis of the Cervix Uteri with a Report of Three Cases".....

Herbert E. Schmitz and Clyde Geiger, Chicago

The frequency of this disease is shown by the occurrence in three cases in 1170 cervical lesions studied by biopsy in our Clinic. These three cases are reported in detail. Two routes of infection are recognized. A recent experimental proof to prove these methods is discussed. The diagnosis is rarely made on the symptoms and for this reason gross and microscopic pathology are discussed. The accepted methods of treatment, both radical and conservative, are considered. Photomicrographs and actual drawings are included in the paper.

General Discussion.

Physicians' Association — Department of Public Welfare—State of Illinois

G. A. Wiltrakis.....Chairman

J. W. Klapman.....Secretary

Tuesday Morning, May 17, 1938

Library

9:00—"Study of the Treatment of Epilepsy"

.....Rudolph G. Novick, Jacksonville

The problem of epilepsy, viewed from any angle,—medical, social or economic—is a widespread and serious one. Yet, it has, comparatively speaking, been very much neglected.

Twenty-five cases of epilepsy have been studied. On the basis of mentality, these cases were divided into three groups and then placed on bromide, a combination of bromide and luminal, and luminal therapy. The data, obtained, reveals some interesting facts and shows the definite need for additional work on the subject of epileptic medication.

Discussion opened by Isidore Finkelman, Chicago.

9:30—"Huntington's Chorea as a Psychiatric and Social Problem in Illinois"..... Eugene I. Falstein and Theodore T. Stone, Chicago.

An exhaustive study of Huntington's chorea has been made in the State of Illinois. Fifty-five cases of the disease, admitted to the Elgin State Hospital since 1900 have been studied in detail. In addition, reports from all of the other Illinois state hospitals, as well as the annual reports of the statistician of the State of Illinois, have been utilized. The paper reveals the present day status of Huntington's chorea in Illinois from the standpoint of incidence, distribution, age, sex, marital status, race, nationality, transmission, and finally the social and eugenic importance of the disease.

Discussion opened by Francis J. Gerty, Chicago.

10:00—"Amanrotic Family Idiocy".....Harry B. FitzJerrell and Bernard B. Neuchiller, Dixon
Case reports are given of two brothers suffering with this disease, together with the postmortem findings of one of the cases. A very striking similarity of the symptomatology, the morphology, and the course of this disease was noted in these two patients.

The paper includes a discussion on the etiology, pathology, and symptomatology of Amaurotic Family Idiocy.

Discussion opened by Roland P. Mackay, Chicago.

10:30—"Evaluation of Newer Treatments of Dementia Praecox".....D. Louis Steinberg, Gert Heilbrunn and Erich Liebert, Elgin
Insulin-shock therapy and convulsive therapy with metrazol in dementia praecox were introduced at the Elgin State Hospital more than a year ago. About 120 patients have received insulin treatment and more than 200 have been treated with metrazol.

The physiological action of insulin and metrazol on the central nervous system, on the blood constituents, and on the metabolism are discussed, and the action of both treatments compared. Findings in animal experiments regarding the occurrence of pathological changes in the central nervous system are briefly presented, especially with regard to their value for clinical procedure.

Evaluation of both treatments: 1—Duration of psychosis. 2—Results obtained in paranoid, catatonic, hebephrenic, and simple dementia praecox. 3—The quality of recoveries and improvements obtained. 4—Occurrence of relapses. 5—Failure to respond to treatment.

Discussion of the dangers and contraindications of each treatment.

Discussion opened by Francis J. Gerty and Franz Alexander, Chicago.

11:00—"Hypothyroidism".

A—Non-Myxedematous Hypothyroidism

.....George A. Wiltrakis, Elgin and Anthony V. Partipilo, Chicago

A discussion of the classification of adult thyroid deficiencies is given together with a workable grouping into (a) hypothyroidism, without myxedema, (b) myxedematous hypothyroidism and (c) non-myxedematous hypothyroidism. The latter term being restricted to the severe hypothyroidisms with a B.M.R. below —30% and an absence of clinical signs of myxedema.

Obesity is not a necessary symptom of a hypo-functioning thyroid. Underweight may occur.

A case is reported of a thin male, with a marked fatigability, a B.M.R. of —45% and a psychosis of a schizophrenic nature. Under thyroid therapy, the B.M.R. returned to normal, the patient gained 67 pounds and improved mentally.

B — Myxedematous Hypothyroidism Associated with Psychosis...Abraham Simon, Elgin

The variation in reaction pattern in cases of myxedema with psychoses is attributed to differences in hereditary, constitutional and environmental background. Elderly patients with involutional and cerebral arteriosclerotic changes are prone to develop an organic type of psychoses with paranoid trends. This type of psychoses was observed in two of the cases who developed myxedema at the involutional period of life. One case of schizoid personality, following thyroidec-tomy developed myxedema associated with a schizophrenic psychoses and following thyroid therapy recovered mentally and physically.

Discussion opened by James H. Hutton, Chicago.

11:30—"Diarrhea as an Institutional Problem." A Review of 1354 Cases.....Louis H. Block,

Chicago; and Bernard L. Greene, Elgin
Diarrhea occurring in institutions, especially mental, is not new, but the high incidence, its morbidity, and mortality is so significant that it warrants considerable more attention than it usually receives. It is a symptom-complex of many infectious, parasitic, organic, and functional disturbances.

For the past three years an intensive study has been undertaken at the Elgin State Hospital of 1,354 cases. Of the total number seen, 1,101 were bacillary in origin, the remainder being attributable to fourteen other causes. These diagnoses were based upon 5,000 sigmoidoscopic examinations, complemented by over 2,500 cultures and agglutination tests.

Discussion opened by Lloyd Arnold, Chicago.

Luncheon of Physicians' Association of Department of Public Welfare, State of Illinois, to

be held promptly at 12:00 Noon, May 17, 1938 at Abraham Lincoln Hotel. The physicians and their wives are cordially invited.

Central States Society of Industrial Medicine & Surgery

Frederick W. Slobe, *President*.....Chicago
Don Deal, *Vice-President*.....Springfield
Frank P. Hammond, *Secretary-Treasurer*....

.....Chicago

Tuesday Morning, May 17, 1938

ELKS CLUB

James J. Callahan, *Program Chairman*.....

.....Oak Park

"Medico-Legal Trends in Occupational Diseases" (Lantern Slide Demonstration)....

.....C. O. Sappington, Chicago

In this annual review of medico-legal experiences with occupational diseases, statistical comparisons will be made of the 1936 and 1937 figures with regard to compensation cases and court decisions in various states. As will be demonstrated, there are great differences.

Reference will be made to the present legislative requirements relative to coverage, and the rights of employers and employees, particularly with respect to common law actions and the availability of common law defenses. Because dust diseases continue to be important and cause the greater number of decisions, this type of occupational disease will be considered separately.

The common occupational diseases for which provisions are generally made in different states will be mentioned, and the relationship of the physician and surgeon discussed.

Summary and recommendations will provide a basis for future medical and legal procedures in this important field.

"Recognition of Early Tuberculosis in Industry"James A. Britton, Chicago

Every doctor who is interested in and particularly those doing industrial medicine know the value of early diagnosis of diseases that may or may not be directly associated with the employment of the individual concerned. Early recognition of tuberculosis in industry is not, per se, the problem, for the good and sufficient reason that the employee may go or be sent to the doctor after full development of the disease yet be "early" recognized. Recognition of *early* tuberculosis is the topic under discussion and to that end I will confine my remarks.

"Industrial Solvents"

.....Wm. D. McNally, Chicago

Since the widespread use of solvents there has arisen a necessity for more information regarding the health hazards. All volatile chlorinated hydrocarbons are poisonous. The symptoms of poisoning by vapor exposure may be acute or chronic depending upon the nature of

the solvent, the concentration in air, and the length of time of exposure. It is imperative that solvents be studied thoroughly as to the fire hazard, before being given to industry.

"Skin Affections in Industry, With Special Reference to the Value of the Patch Test"

.....Cleveland J. White, Chicago

Industrial dermatoses constitute roughly about 60 per cent of industrial diseases, not including actual accidents. The dermatoses are largely made up of dermatitis venenata and eczematoid dermatitides. The causative agents in the production of dermatoses in the normal skin are usually contactants; these will be reviewed in detail and the diagnostic patch tests will be properly evaluated. In eczematoid lesions the possibility of a preceding infectious agent, like ringworm, has to be considered and consequently the lesions produced by superficial fungus infections will be described. More and more non-eczematoid lesions are being observed, a specific example being the production of acneform eruptions by oils and certain types of insulation. Irritants as the most common cause of industrial literature in the last five years will also be presented, whether the irritant be mechanical, vegetable, chemical or infectious as bacterial and fungus.

Tuesday Afternoon, May 17, 1938

Session in conjunction with the Surgical Section of the Illinois State Medical Society.

"Traumatic Lesions of the Spleen"

.....Chester C. Guy, Chicago

Frequency of ruptured spleen, penetrating wounds, crushing injuries, injuries to associated viscera. Analysis of cases at the Cook County Hospital, mortality. Secondary hemorrhage, cases personally observed, review of literature, diagnostic criteria, treatment.

"Injuries of the Right Upper Abdominal

Quadrant"....Philip H. Kreuscher, Chicago

Injuries to the abdominal wall are discussed and include such lesions as hematoma rupture of the muscles and fascia as well as traumatic hernia. Trauma to the liver, with or without rupture, are taken up with a report of several cases. Discussing symptoms and diagnostic features of this type of injury. Post-traumatic rupture of ulcers of the stomach or intestine are covered. Injuries to the large or small bowel from direct violence are cited. Direct and indirect violence injuring the kidney are discussed in detail.

Various sections of the Illinois State Medical Society's Convention will continue through Thursday Noon, May 19, 1938. Our membership is invited to remain and visit the section of choice.

Meetings of the House of Delegates

Tuesday Afternoon, May 17, 1938

3:00 First meeting of the House of Delegates called to order by the President, R. K.

Packard, for Reports of Officers, Councilors, Committees, appointment of Reference Committees, Introduction of Resolutions, and for the transaction of other business which may come before the House.

Thursday Morning, May 19, 1938

- 9:00 Second meeting of the House of Delegates called to order by the President for the Election of Officers, Councilors, Committees, Delegates and Alternates to the American Medical Association, Reports of Reference Committee and action on same, Action on Resolutions, and for the transaction of other business to come before the House.

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SECTION PROGRAMS

SECTION ON MEDICINE

Cecil M. Jack.....*Chairman*
Robert Keeton.....*Secretary*

Tuesday Afternoon, May 17, 1938

Knights of Columbus Building
Columbus Hall

- 2:30—"The Diagnostic Value of Sternal Marrow Aspirations".....
.....Louis R. Limarzi, Chicago

With increasing knowledge in the field of hematology it becomes more evident that a complete blood study should also include a study of the bone marrow. The blood picture does not always accurately reflect the underlying pathologic process that exists in the blood forming organs. Certain types of leukemia (aleikemic), obscure cases of anemia, conditions presenting thrombopenia, leukopenia or neutropenia, so called cases of "purpura hemorrhagica" as well as cases of splenomegaly and lymphadenopathy may be diagnosed by sternal marrow aspiration. The ease with which sternal marrow may be aspirated and the diagnostic and prognostic value that it offers suggests sternal puncture as a routine hematologic procedure.

Discussion opened by R. H. Young, Evanston.

- 3:00—"The Diagnostic and Prognostic Value of Erythrocyte Sedimentation Rate in General Practice".....J. B. Stokes, Pontiac

In determining the presence or absence of toxemia, as well as progress, the blood sedimentation test will be found very simple and of considerable diagnostic and prognostic value. It is not, however, specific, being affected by many acute, sub-acute, and chronic infections, and also by malignancy. Several methods of doing this test are being utilized, but Cutlers' technique, using .9 c.c. of blood and .1 c.c. 3% sodium citrate,

seems entirely satisfactory. Very little equipment, other than that which every physician has in his office, is required, and only the reading at the end of one hour need be taken.

Discussion opened by Seymour J. Cohen, Chicago.

- 3:30—"Medical Treatment of Patients with Jaundice".....Sidney A. Portis, Chicago

Many patients are disabled with jaundice, which, for the most part, is due to disturbances in or about the liver. Occasionally, jaundice may be a symptom of some systemic disturbance other than liver disease. The purpose of this discussion is to discuss a safe and sane medical approach to the problem, taking into consideration what we know about the liver function at the present time and laying a special emphasis on when and when not to do surgery in these cases.

Discussion opened by Edgar M. Stevenson, Bloomington.

- 4:00—"Sulfanilamide—Its Use in General Practice".....Arthur A. Goodyear, Decatur

The general practitioner contacts many cases of Hemolytic Streptococcus Infection. Sulfanilamide acts in a specific manner on the Beta-Hemolytic Streptococcus in vivo. Its use in other hemolytic streptococcus infections, particularly Scarlet Fever and Erysipelas, is well established. Recent information has proved Sulfanilamide to be a valuable adjunct in the treatment of Gonorrhea and Malaria. Experience with the use of Sulfanilamide will be given, including a case report of a Beta-Hemolytic Streptococcus Meningitis with recovery.

Discussion opened by Eugene F. Traut, Chicago.

- 4:30—"Some Practical Suggestions in Venereal Disease Control".....A. J. Levy, Chicago

Information presented to the public concerning venereal disease control should aim at dispelling ignorance and timidity of masses, and familiarize them with the required confidential anonymous reporting system. Tactful methods in eliciting patient's cooperation are essential, first in treatment and second in tracing contacts and sources of infection. An organized system of inter-urban and inter-state reciprocity for follow-up of sources of infection is very significant in venereal disease control. Establish prophylactic stations to give a comprehensive course of instruction together with a course of actual drills in preventive measures for all youths.

Discussion opened by I. H. Neece, Decatur.

Wednesday Morning, May 18, 1938

Joint Session with Sections on Surgery and Radiology.

SYMPOSIUM ON INTESTINAL OBSTRUCTION

"Intussusception".....Philip Rosenblum, Chicago

Intussusception is one condition in which a delay of a few hours in diagnosis may mean the life of the child. It occurs 3 to 1 in boys. The exact etiology is unknown. The typical acute case begins suddenly, usually in a previously healthy baby under one year and is characterized by intermittent attacks of pain, more or less shock, vomiting and blood or bloody mucus on rectal examination; also palpable sausage-shape mass.

The most frequent types are ileocecal, ileocolic, ileoileal and colocolic.

Subacute and chronic varieties are more frequent in older children, the symptoms of which are less typical—anal bleeding often being absent. Roentgen Ray examination will reveal the obstruction.

Diagnosis of intussusception depends on a careful history and physical examination, if necessary under anesthesia. Treatment is surgical.

"Some Pharmacological Considerations of Intestinal Obstruction". Carl Dragstedt, Chicago

There are several aspects of the problem of acute intestinal obstruction that present questions of interest to the pharmacologist. There is the question of the nature of the action of drugs upon the intestine during the various phases in the progress of the obstruction syndrome from the early hypermotility to the late paralytic ileus and the rationale of the use of drugs having intestinal effects under various circumstances. There is also the question of the possible toxemia with its associated problems of the nature of the toxic substance, the route of absorption, and the possible effectiveness of anti-toxic therapy. Some observations and considerations of these phases of the obstruction problem will be discussed.

"The Pathogenesis and Diagnostic Symptoms of Intestinal Obstruction".....

.....John A. Green, Rockford

A brief consideration of this subject from the standpoint of the various types of obstruction.

A review of the pathological changes that take place in the bowel wall, lumen and blood supply of the intestine: consideration of the formation of the destroying toxic substances that follow strangulation: the time of their appearance in different locations and in different types of obstruction. Consideration of early and late symptoms in the different types and the necessity for early recognition and early treatment.

"Some Physiological Principles Involved in Acute Intestinal Obstruction".....

.....Lester R. Dragstedt, Chicago

Evidence will be presented, as a result of experimental work on lower animals, that the secretion of gastric juice and of pancreatic juice into the upper portion of the alimentary tract and its failure of reabsorption as a result of vomiting or of accumulation in the non-absorbing regions of the intestine, results in profound dehydration and alteration in the chemical composition of the blood plasma. These changes are most profound in acute obstruction in the upper portions of the intestine and are less significant in low obstruction.

Evidence will also be presented, as a result of experimental work on lower animals, that when the small intestine becomes distended, such as may be produced by complete obstruction, various types of toxic chemical substances may be absorbed from the intestine that are not absorbed by the normal mucosa. Direct experimental evidence has thus been obtained that in certain types of acute intestinal obstruction, a toxemia of intestinal origin may develop. The significance of these two factors, namely dehydration and alteration in the chemical composition of the plasma as a result of failure of reabsorption of the digestive juices, and toxemia as a result of the absorption of poisonous products from the intestine will be discussed in various types of clinical obstruction and in obstruction at various levels of the intestinal tract.

"Radiological Aspects of Intestinal Obstruction".....James T. Case, Chicago

The radiological signs of acute and chronic intestinal obstruction are discussed in some detail, together with a description of the technical maneuvers needed in order to elicit the findings. Indications are considered. Contraindications are analyzed. Present day equipment generally available for the roentgenologist makes it possible to apply the roentgen method in practically all cases of suspected bowel obstruction. Special attention is given to ileus.

"The Surgical Treatment of Intestinal Obstruction".....H. E. Ross, Danville

The wise selection and meticulous execution of a desirable operative procedure that takes into careful consideration the nature, location and extent of the obstruction is an absolute surgical requisite. The surgeon has at his disposal the following operative procedures in dealing with either type:

1. The disruption of constricting bands or adhesions.
2. Simple enterostomy or colostomy.
3. Exteriorization with the formation of an immediate or delayed fistula.
4. Entero-anastomosis about the obstructing pathology or excision of obstructed bowel with re-establishment of its continuity.

A simple operative procedure is always the one of choice despite possible future reconstructive surgery.

Wednesday Afternoon, May 18, 1938

Columbus Hall

2:30—"Pituitary Therapy in General Practice".....Elmer R. Severinghaus, Madison, Wis.

The use of anterior-pituitary growth promoting extract in cases of dwarfism requires the demonstration that the epiphyses have not yet united with the long bones so that growth may still be expected. Such treatment is worth while for a considerable number of dwarfs before adolescence is well advanced. The other well developed aspects of anterior-pituitary therapy are in the stimulation of the sex-maturing processes. Indication for this consists not only of undescended testicles, poorly developed testicles and external genitalia, in the male; but also of poorly developed external and

internal genitalia in the female, irregularities in the menstrual cycle, reduction in fertility when this can be explained by tissue studies as due to disturbance in the ovarian action. These pictures may or may not be associated with obesity of the Froehlich type. The obesity needs to be treated directly by diet limitation, however. The technique for making diagnostic differentiation in this field and for the use of the known anterior-pituitary extract will be presented with case demonstrations.

3:15—Report of Nominating Committee and election of Secretary.

3:20—"The Value of the Electrocardiogram in Routine Examinations".....

.....James B. Berardi, Dwight

The paper consists essentially of a review of 1,500 electrocardiograms setting forth their value in both routine examinations and in examinations where cardiac complaints are elicited. The facts presented illustrate the large number of cases who have cardiac pathology without the apparent symptoms, either subjective or objective. Many cases reveal severe cardiac damage which is later confirmed by autopsy or physical findings. It further stresses the importance of early diagnosis of cardiac conditions so that patient can readjust himself with special reference to his vocation before irreparable damage has been done.

Discussion opened by George Parker, Peoria.

3:50—"The Present Status of Insulin and Metrazol Shock Treatment of 'Functional Psychoses'".....Abraham A. Low, Chicago

The literature, with close to 2,000 "shock treated" patients reported on, is briefly reviewed. An analysis is given of a series of 130 patients treated by the author and his associates either with hypoglycemia or with metrazol or with both combined. Results, indications and counterindications, dangers and complications of the treatment are discussed. A comparative study is added of the results secured today with the shock treatments and those formerly obtained with other chemotherapeutic procedures.

Discussion opened by S. N. Clark, Jacksonville and J. V. Edlin, Chicago.

4:15—"Spontaneous Subarachnoid Hemorrhage".....Richard F. Herndon, Springfield

Spontaneous hemorrhage into the subarachnoid space produces a clinical syndrome distinct enough to be regarded as an entity. It occurs with sufficient frequency for everyone to see more than an occasional case. The usual causes are intracranial aneurysms and arteriosclerotic changes in the cerebral vessel. The clinical picture and courses are so characteristic that a tentative diagnosis is usually possible which can be confirmed by spinal puncture. The course and treatment are described. Lantern slide demonstration.

Discussion opened by Garm Norbury, Jacksonville.

4:45—"New Knowledge of Chemistry of

Nerve Physiology".....

.....Emmet F. Pearson, Springfield

Much of the mystery concerning the chemical and physical changes which accompany nerve activity has been investigated and sufficiently solved in recent years so that the clinician may now have a working knowledge of the dynamics involved in muscular contraction, transmission of sensation, and altered function of the sympathetic and parasympathetic systems. The action of acetyl choline, potassium ions, calcium and adrenalin are described. The clinical importance of visualization of the "adrenergic" and "cholinergic" functions and an understanding of the "nocifensor" system of nerves is emphasized by case reports.

Discussion opened by G. B. Smith, Alton.

Thursday Morning, May 19, 1938

Columbus Hall

Joint Session with Sections on Surgery; Eye, Ear, Nose and Throat; Public Health and Hygiene; and Radiology.

SYMPOSIUM ON DISEASES OF THE RESPIRATORY TRACT

9:00—1. "The Relation of Allergy to Diseases of the Respiratory Tract".....

.....Tell Nelson, Chicago

The paper will deal with two phases of the subject, namely:

1.—The role played by infectious respiratory diseases such as pneumonia, bronchitis, etc., as an exciting cause of allergic phenomena in the potentially allergic individual, pointing out the errors often made by assuming these allergies to be on a bacterial basis, and

2.—The relationship of allergies, chiefly of the nasal and respiratory type to both the acute and the more chronic respiratory conditions as bronchiectasis and emphysema.

2. "Bronchoscopy in Relation to Diseases of the Respiratory Tract".....

.....Paul H. Holinger, Chicago

Bronchoscopy serves a diagnostic and therapeutic purpose in diseases of the respiratory tract. Diagnostically, bronchoscopy permits direct specular examination of the tracheobronchial tree of a patient of any age. This aids in the interpretation of physical and roentgen findings, but is not a substitute for either. Therapeutically, bronchoscopy is most frequently associated with removal of foreign or foreign bodies and intra-bronchial neoplasms, although establishing and maintaining drainage in pulmonary suppuration constitutes the most important phase of this subject.

3. "Bronchiectasis"

.....D. O. N. Lindberg, Decatur

The subject is reviewed, etiologically and diagnostically, from the standpoint of ectasias well prior to the development of the usually considered bronchiectatic symptom-complex characteristic of the advance case.

The lipiodol roentgenogram, with varying exposure film techniques, is discussed and suggestions presented to provide for uniform criteria in the interpretation of the "plain" film. The role of bronchoscopy in diagnosis and treatment leads to a brief resume of the latter, especially for the earlier forms.

4. "Pneumonia in Childhood"

.....James B. Gillespie, Urbana

The etiology of pneumonia in childhood with particular reference to bacterial causes will be presented. Advances made in serum therapy of this disease justify careful analysis of the causal organism in cases of pneumonia today. The symptomatology, clinical features and certain laboratory findings of the pneumonias will be discussed. Satisfactory methods for establishing the etiology and anatomic distribution of the lesion in children and more recent contributions to treatment of childhood pneumonia and its complications will be presented.

5. "Surgical Treatment of Pulmonary Tuberculosis"Willard Van Hazel, Chicago

Surgery is an important adjunct in the treatment of pulmonary tuberculosis. Its wide acceptance is evidence of its effectiveness. Artificial pneumothorax therapy has been extended earlier and to more patients than formerly and its limitations create problems that can be overcome in a large measure by a variety of surgical procedures. These procedures too have undergone considerable change since their early application. Preservation of function of the lung is a prime consideration which allows the benefits of this form of treatment to be extended to many to whom it was formerly denied.

6. "The Differential Diagnosis of Pulmonary Lesions from the Roentgen Standpoint"...

.....Adolph Hartung, Chicago

Pulmonary lesions frequently produce clinical manifestations which cannot be correctly interpreted without the aid of the roentgen examination. The findings obtained with it may be of prime importance in the differential diagnosis by suggesting the nature of the pathological process present. Such variations as may serve this purpose will be discussed in connection with the more commonly observed conditions.

7. "Intradermic Immunization Against Scarlet Fever".....C. A. Earle, Des Plaines

Intradermic immunization against Scarlet Fever. The Dicks have shown that 115,000 S.T.D. of their toxin given subcutaneously in 5 divided doses will immunize 90% or more of susceptible children against the irothogens or legal variety of Scarlet Fever. The rather severe local and general reactions attending these injections have deterred their general use. It is rapidly being shown that about 1/10 of the amount prescribed by the Dicks if given intracutaneously, is equally effective and may be given in 3 doses and are unattended by unpleasant local or general reactions.

In my experience 87% of a group of 115 children were rendered Dick negatives by 3 intradermic injections.

Although Scarlet Fever of late has been mild its morbidity is high (22,000 cases in Illinois in 1935), and some 50% of mild cases are followed by serious sequelae mass immunization is certainly justified.

Section on Surgery

Sumner L. Koch.....Chairman

Darwin KirbySecretary

Tuesday Afternoon, May 17, 1938

Community Hall

SYMPOSIUM ON INJURIES OF THE ABDOMEN

Members of the Central States Society of Industrial Medicine and Surgery will be guests of the Surgical Section.

"Diagnosis of Lesions of the Spine Producing Abdominal Pain"

.....Edward L. Compere, Chicago

Pain in the abdomen or an acute ileus may be the most marked symptom resulting from lesions of the spine. These lesions may be produced by acute or chronic trauma, acute or chronic infections of the spine, or from benign or malignant neoplasms. An attempt will be made to emphasize the need for ruling out these vertebral lesions in cases of either acute or chronic abdominal pain, before subjecting the patient to laparotomy operations.

Discussion opened by George W. Staben, Springfield.

"Traumatic Lesions of the Male Urethra"...

.....Harry Culver, Chicago

Uncommon urethral lesions as penetrating injuries, constrictions and those produced by instrumentation are not discussed.

Straddle injuries of the anterior urethra and posterior urethral injuries associated with fractured pelvis are discussed in detail. Anatomical considerations and factors concerned in complications are emphasized.

An analysis is made of a series of patients personally managed, with a discussion of the management of each type of lesion, indicating the surgical problems encountered.

Slides, demonstrating the pertinent anatomy, as well as various points in surgical technic will be used.

Discussion opened by Leander W. Riba, Chicago; and Mark Nelson, Canton.

"Subcutaneous Injuries of the Abdomen"....

.....Frederick Christopher, Evanston

With the increasing frequency of automobile accidents, subcutaneous injuries of the abdomen are becoming more common. Some of these cases will always die unless operated upon. In others operation is unnecessary or even harmful. It is of utmost importance to understand thoroughly the evidence which indicates the advisability of operation. Unfortunately this evidence, even in fatal injuries, may be very slight indeed, and the keenest surgical judgment must be ex-

exercised. This paper is intended to furnish guidance in the diagnosis of subcutaneous abdominal injuries and advice as to the treatment.

"Injuries of the Right Upper Abdominal Quadrant".....Philip H. Kreuscher, Chicago

Injuries to the abdominal wall are discussed and includes such lesions as hematomata rupture of the muscles and fascia as well as traumatic hernia. Trauma to the liver, without rupture, are taken up with a report of several cases. Symptoms and diagnostic features of this type of injury. Post-traumatic rupture of ulcers of the stomach or intestine are covered. Injuries to the large or small bowel from direct violence are cited. Direct and indirect violence injuring the kidney are mentioned as a probability.

"Spleen Injuries".....Chester C. Guy, Chicago

Frequency of ruptured spleen, penetrating wounds, crushing injuries, injuries to associated viscera, analysis of cases at the Cook County Hospital, mortality, secondary hemorrhage, cases personally observed, review of literature, diagnostic criteria, treatment.

General Discussion.

Wednesday Morning, May 18, 1938

Columbus Hall

Joint Session with Sections on Medicine and Radiology.

SYMPOSIUM ON INTESTINAL OBSTRUCTION

"Intussusception"...Philip Rosenblum, Chicago

"Some Pharmacological Considerations of Intestinal Obstruction".Carl Dragstedt, Chicago

"The Pathogenesis and Diagnostic Symptoms of Intestinal Obstruction".....

.....John A. Green, Rockford

"Some Physiological Principles Involved in Acute Intestinal Obstruction".....

.....Lester R. Dragstedt, Chicago

"Radiological Aspects of Intestinal Obstruction.....James T. Case, Chicago

**"The Surgical Treatment of Intestinal Obstruction".....H. E. Ross, Danville
(For Abstracts of Papers, See Section on Medicine.)**

Wednesday Afternoon, May 18, 1938

Community Hall

Joint Session with Section on Radiology

SYMPOSIUM ON THE TREATMENT OF MALIGNANT DISEASE

"The Management of Carcinoma Patients by the General Practitioner".....

.....C. O. Heimdal, Aurora

It is important that the physician realize the insidiousness of malignant disease. It is known, but too often not considered by the physician, that a person may be

afflicted without the presence of subjective or objective symptoms. Too frequently a malignancy is overlooked because the physician does not thoroughly investigate his patients. It would be ideal if we could routinely investigate all our cases with the aid of the x-ray. We can, however, do a thorough history and physical examination.

Public education is necessary in order that patients report their symptoms to their physicians early. In early and questionable cases of malignancy consultations, biopsies and x-rays are indicated. When the diagnosis of malignancy has been confirmed close cooperation with the surgeon is necessary. The patient should be referred to a place where facilities are present for his care. If the case is radiological the same is true. The general practitioner examines the patient at regular intervals and is ever on the alert for the presence of metastasis.

"Cancer and Precancerous Conditions of the Skin".....Edward A. Oliver, Chicago

The early recognition of precancerous and cancerous conditions of the skin and their immediate treatment is a matter of the most vital importance. During 1934 five thousand persons died of cancer of the mouth and three thousand three hundred and fifteen died of cancer of the skin. During a period of thirteen years, deaths from cancer of the buccal cavity and skin showed an increase of three thousand two hundred and eighty-one.

In cases of advanced cancer of the skin, the results obtained with treatment depend on the grade of malignancy, the parts involved, and the character of the treatment. In the early stages, before the lesion has become invasive or metastasis has occurred, a cure can generally be effected.

"The Treatment of Intracranial Gliomas"...

.....Harold C. Voris, Chicago

There are marked and important differences in the clinical behavior of the major groups of gliomas; consequently the proper pathologic classification of a glioma will aid considerably in giving a prognosis and determining suitable treatment; conversely careful clinical study of the patient will often lead to a correct pre-operative diagnosis.

The surgical procedures that may be carried out on gliomas depend on their location and degree of malignancy. The more benign types should be resected as far as possible; the more malignant, unless of relatively small extent had best be treated with decompression and later roentgen therapy. Certain types respond especially well to the latter.

"Pneumonectomy for Bronchogenic Carcinoma

of the Lung".....W. E. Adams, Chicago

Bronchogenic carcinoma of the lung has created considerable interest during the past five years. Since the first successful total pneumonectomy for this condition was performed by Dr. Ewerts Graham in the spring of 1933 an increasing number of similar results have been reported. The importance of early diagnosis cannot be overemphasized and the procedure which offers most

promise in this respect is the early use of the bronchoscope in patients with persistent cough of unknown etiology.

Case report: White male 42. Symptoms of cough, fever and sweats of two months duration. Bronchoscopy with biopsy revealed a carcinoma on the right side. Total Pneumonectomy (right) performed through the third left interspace on 1-29-'37. Uneventful convalescence. Discharged seven weeks after operation. At work full-time two and one-half months later. No complaints.

"Early Pathological Lesions of the Cervix and Endometrium". Benjamin H. Orndoff, Chicago

The importance of careful periodical investigations of conditions involving the cervix, the canal, and the corpus uteri, as well as the oviducts, cannot be over-emphasized. Findings elicited through palpation, inspection, probe diagnosis, etc., are sadly inadequate in many important cases. The dangers attending the use of the surgical curette and some other surgical procedures for diagnostic purposes should be recognized. X-rays and contrast materials have become indispensable in the investigation of the pelvic genital organs. Under the direction of x-rays, certain electrosurgical procedures may be safely conducted within the uterus. A biopsitome has been devised by which specimens for microscopy may be secured without introducing the serious objections to the use of the curette. Neoplastic regressions following adequate irradiation can be determined more definitely and the early recognition of pathology is more certain when x-rays and contrast material are used more routinely. With improved diagnostic facilities, there follows more reliable prognosis.

"Treatment of Malignancies of the Colon and Rectum". Lorin D. Whittaker, Peoria

Marked advances have been made in the treatment of malignancies of the colon in the past ten years. Malignancies of the colon and rectum are attacked by irradiation, fulguration, or surgery. Indications and limitations of each will be discussed with emphasis on surgery. The operative procedure used varies with the location of the lesion. Multiple stage operations are favored over one stage operations. Local immunity in relation to multiple stage operations; the place of pre-operative vaccination; the importance of pre-operative preparation and post-operative care; and technical procedures which tend to reduce complications and increase the limits of operability will be discussed.

Discussion opened by Guy V. Pontius, Chicago.

Thursday Morning, May 19, 1938

Columbus Hall

Joint Session with Sections on Medicine; Eye, Ear, Nose and Throat; Public Health and Hygiene; and Radiology.

(For Program and Complete Abstracts of Papers, See Section on Medicine.)

Section on Eye, Ear, Nose and Throat

C. B. Voigt.....Chairman
Samuel J. Meyer.....Secretary

Tuesday Morning, May 17, 1938

Ladies' Parlor

8:30—"Hemorrhage from the Larynx, A Report of Two Cases".....
.....Arthur H. Geiger, Chicago

Report of two cases of hemorrhage from the vocal cords. In these cases there was no pathological condition that could be demonstrated outside the local site of hemorrhage. The differential diagnosis is important. Ulcers, tumors and systemic causes must be considered. The treatment is mainly symptomatic and direct medication to the cords only if local conditions call for it. Prevention of recurrence by proper vocal training is important.

Discussion opened by W. A. McNichols, Dixon; and O. E. Van Alyea, Chicago.

9:00—"Pediatric Treatment of Otolgic Sepsis, including Meningitis".....
.....Philip Aries, Chicago

The co-operative management of otogenic sepsis in children by the otologist and pediatrician offers the patient the best chance for recovery. The surgeon must eradicate foci of infection and institute drainage with the least manipulation possible. The pediatrician's objective is to maintain the integrity of the body tissues and institute measures to combat toxemia and bacteremia. The administration of fluids, nourishment, blood transfusions, serum and drug therapy are considered.

When there is a complicatory meningitis, spinal fluid drainage, cremotherapy and sera in addition to the general treatment are therapeutic aids.

Discussion opened by George Woodruff, Joliet.

9:30—"The Importance of Cooperation Between the Medical Profession and Social Workers" Audrey Hayden, Chicago

The uses of a medical social eye worker to the medical profession—the qualifications of such a worker.

The value of a social worker as interpreter of the medical profession to the lay public.

The value of the social worker as a liaison officer between the doctor and the patient:

(a) to enforce the doctor's orders;

(b) to investigate the social history of the clinic cases.

The value of medical social eye workers in eye clinics.

The value of medical social workers in schools for the blind.

Discussion of the social workers contributions on glaucoma, interstitial and phlyctenular keratitis, ophthalmia neonatorum, sympathetic ophthalmia, congenital cataracts and trachoma.

10:00—"The Consideration of Some Practical Points in the Management of Inflammatory Diseases of the Uveal Tract".....

.....G. LeRoy Porter, Urbana

This paper will not contain case reports nor statistical data of results obtained, but will cover the important points of diagnostic procedure necessary to establish the causative factors; also, the relation of the oculist to the consultants who are essential in the management of these cases. A discussion of both local and general therapy will be included.

Discussion opened by G. Guibor, Chicago; and Thomas A. Starkey, Beardstown.

10:30—"Cervical Fascia and Infections About the Neck"R. W. Kerwin, Chicago

Fascial planes and spaces:

1. Prevertebral fascia
Retropharyngeal space
2. Pretracheal fascia
Cervical mediastinotomy
3. Investing fascia
Parotid and submaxillary spaces
4. Carolid sheath
Parapharyngeal space

Anterior sternocleidomastoid approach. Submaxillary approach after Mosher.

Discussion opened by Carl Christoph, and Lindon Seed, Chicago.

11:00—"The Value of Roentgenograms in Certain Diseases of the Neck".....
.....Charles D. Sneller, Peoria

The use of the x-ray in the interpretation of neck pathology has long been recognized and yet it is still not sufficiently appreciated by the Otolaryngologist. The average Roentgenologist is not sufficiently trained in the anatomy and pathology of the neck to aid the Otolaryngologist in much more than general detail. Therefore, it behooves the latter to add his more detailed knowledge to that of the Roentgenologist. Various diseases will be pointed out but particular mention will be made of the edema and abscess in inflammations, the determination of their extent and better treatment.

Discussion opened by Sylvio Sciarretta, Chicago.

11:30—"Etiologic and Therapeutic Factors Involved in Blepharo-Conjunctivitis".....
.....Nathan K. Lazar, Chicago

A report of over fifty cases of Blepharoconjunctivitis to determine, if possible, the role played by fungi. Various therapeutic measures were used and results noted. No definite conclusions are given.

Discussion opened by Eli Salinger, Chicago.

12:00—"Cleft Palate and Lip".....
.....L. W. Schultz, Chicago

The author's change from the usual procedure in dealing both with cleft palates and lips merits publication. His method of freeing the principal blood supply to the palate enabling him to elongate it, also his modification of dealing with the anterior portion of wide complete palatal clefts will be discussed.

In both cleft palate and lip he will discuss his time of operation and why, and will demonstrate his change in the operation on double cleft lips from the routine method. The paper will be illustrated with lantern slides.

Discussion opened by Frederick W. Merrifield, and Caspar Epstein, Chicago.

Tuesday Afternoon, May 17, 1938

Ladies' Parlor

2:30-4:00—"Anatomy and Surgical Approaches to the Fascial Planes and Pseudocompartments of the Neck and Mediastinum"Louis Zolo Fishman and George J. Wienman
"Kodachrome Exhibit: Department of Otolaryngologic Photography of The Department of Otolaryngology, University of Illinois College of Medicine, Chicago."

Francis L. Lederer and Louis Zolo Fishman.

2:30-4:00—"Plastic Surgery About the Eyelid"Philip O'Connor, Chicago

4:00-5:30—"Functional Examination of the Ear"Paul A. Campbell, Chicago

4:00-5:30—"Ocular Tuberculosis".....
.....Beulah Cushman, Chicago

Theories concerning the use of tuberculin in the treatment of tuberculous eye conditions and the diagnostic tests with old tuberculin and the purified protein derivative. Detailed instruction as to the use of tuberculin in treatment as a desensitizing agent.

6:00 P. M. Annual Banquet, Sun Parlor of Leland Hotel.

Wednesday Morning, May 18, 1938

Ladies' Parlor

8:30—"Nasal Septum Surgery in Children"..
.....M. H. Cottle, Chicago

The anatomy of the nasal septum is reviewed from an embryological viewpoint.

Children frequently suffer from the effects of nasal obstruction due to abnormalities and injuries of the nasal septum. The usual adult operations are not indicated because the nose is still developing—its growth depending in great measure on the development of the septum.

A review of the literature and two surgical suggestions are offered to promote an interest in the management of these cases.

Discussion opened by Frank Novak, Chicago.

9:00—"Management of Cross Eyes".....
.....W. A. Fisher, Chicago

Discussion opened by Burton Haseltine, Chicago.

9:30—"End Results in the Treatment of Clinic Suppurative Otitis Media".....
.....George Shambaugh, Jr., Chicago

One hundred consecutive cases of chronic suppurative otitis media encountered in practice are analyzed with reference to etiology, type of pathology and treatment with especial reference to the indications for surgery and to the end-results of conservative and surgical management. Particular attention is paid to the hearing before and after treatment as well as to the present status of the ears with reference to discharge.

A brief description of the Bondy type of modified radical mastoidectomy for the preservation of hearing as used in certain of these cases is given with a brief motion picture illustrating the Bondy operation with primary skin graft.

Discussion opened by Joseph Beck, Chicago; and Thomas Galloway, Evanston.

10:00—"Exophthalmos"A. D. Ruedemann, Cleveland, Ohio (Guest Speaker)

A diagnosis of exophthalmos is easily made by measuring the position of the eye, but the differential diagnosis so far as the cause is concerned is sometimes very difficult. This must be done by exclusion, the following considerations being of value:

1. Is the exophthalmos bilateral or unilateral?
2. What is the age of the patient?
3. Is there an increase in the orbital contents or a decrease in the size of the orbit? Roentgen examination is of great assistance here in ruling out or determining changes in the bone.
4. If bilateral, the physical examination, examination of the blood, and determination of the pulse rate, etc., may help to indicate the cause.
5. If unilateral, palpation and determination of any inflammation are important.
6. The history is usually of little value and pertinent information must be pieced together to be of any value. Especial emphasis should be directed toward the time of onset.

Early diagnosis and treatment are most essential if the best functional results are to be obtained.

Wednesday Afternoon, May 18, 1938

Ladies' Parlor

2:30—Report of Nominating Committee and Election of Officers.

2:35—"Acute Laryngitis in Infants"
Glenn Greenwood, Chicago

The etiology, symptoms and diagnosis of cases seen at Children's Memorial Hospital will be briefly reviewed and the anatomy and treatment will be taken up in considerable detail.

Discussion opened by Paul Holinger, Chicago.

3:00—"Chronic Sinus Disease and External Ethmo-frontal Sphenoid Operation"
Irving Muskat, Chicago

There is a great misconception as to the status of chronic nasal sinus disease. Chronic suppuration can be eradicated with success. This is particularly true

of the antrum. Intranasal operations are not always adequate or successful when dealing with chronic ethmoid disease, but the external ethmo-sphenoid operation affords the only real solution to this problem. The value of the external operation is underestimated because of lack of knowledge of the procedure and the difficulty to execute a masterful technique which is essential for success. The evaluation of etiological factors, particularly allergy, are important but skin testing and injections cannot displace surgery in chronic suppurative sinus disease.

Discussion opened by M. Rees Guttman and Sam Salinger, Chicago.

3:30—"Finer Uses of the Cross Cylinder in Refraction"Philip A. Halper, Chicago

The most important single accessory used in refraction is the cross cylinder. When the full uses of this unerring instrument are mastered, (1) meticulous determination of very small cylinders together with their (2) exact axes are speedily determined. Especially does this hold true in prescribing small cylinders either off axis or against the rule when doing manifest refractions. Also the instrument aids in (3) uncovering full astigmatic errors of large amounts. The cross cylinder is used as a (4) check of the exact axis when the patient is unable because of relatively poor vision with a moderate astigmatic error to locate the axis accurately. Lastly it is of aid in presbyopes in (5) determining the accuracy of the addition for the specific distance of the necessary near point.

Discussion opened by Thomas Allen, and Jack P. Cowen, Chicago.

4:00—"A New Treatment for Progressive Myopia"W. Moore
 Thompson and Oscar B. Nugent, Chicago

The paper will include history and etiology, the treatment to consist of the use of prisms and muscle treatments including stereopticon.

The treatment is based upon a theory that the chief etiological factors are continuous pressure of the rectus muscle upon the coverings of the eye, which being increased by the constant tendency to divergence during the effort of the eyes at binocular fixation produces a gradual but definite lengthening of the anterior posterior pole of the eye.

There will be a demonstration of one or more cases if time permits.

Discussion opened by William F. Lamkin, Champaign.

Thursday Morning, May 19, 1938

Columbus Hall

Joint Session with Sections on Medicine; Surgery; Public Health and Hygiene, and
 Radiology

(For program and complete abstracts of papers, see Section on Medicine.)

Section on Public Health and Hygiene

Winston Tucker.....*Chairman*
F. S. Needham.....*Secretary*

Tuesday Afternoon, May 17, 1938

Gymnasium

2:30—"Mosquito Control in Illinois as a Public Health Measure".....
.....Spencer S. Fuller,
.....Health Commissioner, Riverside

Tax supported activities are now going on in twenty-five states. Illinois joined the ranks in 1927. Outline of how districts may be formed in Illinois. Seven known diseases of man, domestic animals and birds transmitted by mosquitoes. Man-made mosquito breeding places and natural breeding places. Role played by yellow fever and malaria in Illinois discussed. Effect on property valuation and general sanitary conditions of mosquito control. How mosquito control and wildlife conservation may go hand in hand. Methods used in controlling mosquitoes. Number of varieties in Illinois and those most prevalent with some of the characteristics effecting their control.

Discussion opened by Robert L. Reynolds, Maywood.

3:00—"A Survey of Scarlet Fever, Hemolytic Streptococcus Throat Cultures and Dick Tests in a Children's Hospital".....
.....John A. Bigler, Highland Park

This study was carried out over a period of two years because of the frequent occurrence of scarlet fever in both hospital patients and hospital personnel. Cultures of the nose and throat for hemolytic streptococci and Dick tests were done on all children admitted to the hospital. Similar cultures were taken on all the personnel and Dick tests were done before employment. Cultures were repeated in both children and personnel at various periods. The results were correlated with the presence or absence of tonsils and with the presence of throat infections. All the cases of scarlet fever occurring in the city of Chicago during the same two-year period were reviewed in an effort to trace secondary cases.

Discussion opened by M. H. Seifert, Wilmette.

3:30—"The Value of One Injection of Alum Precipitated Toxoid in Controlling Diphtheria".....C. H. Benning, Peoria

In February, 1937, 1691 children in the grade schools of Peoria, Illinois were given one injection of alum precipitated toxoid as a preventive measure against diphtheria. In February, 1938, it was decided that the immunity developed should be checked.

Five schools in which 596 children had received the one injection of toxoid were chosen for schicking. Four hundred twenty eight children took the schick test and returned for the reading. Three hundred seven were negative, and 121 were positive. Six took the test but

did not return for the reading. Of the 428 who took the test and returned for the reading 71.73% were negative and 28.27% were positive. The ages of the children tested ranged from 2 years to 15 years. So far as can be ascertained from health department records none of the children inoculated with the one injection of alum precipitated toxoid have developed diphtheria.

Discussion opened by C. A. Earle, Des Plaines.

4:00—"Milk Sickness".....
.....G. Howard Gowen, Champaign

In the period 1936 and 1937, four known outbreaks of milk sickness occurred in Illinois, with 21 cases and 2 deaths. The counties involved were Shelby, Effingham, Wabash and Perry. All cases exhibited the symptoms of weakness, nausea and vomiting, obstinate constipation, and trembling on exertion. All of the families had their own cows, and the symptoms were in proportion to the intake of butter, cream and milk. In every instance "trembles" had been diagnosed in the livestock. There had been a loss of one or more animals from the disease. In every instance white snake root was found in abundance in the pastures which were wooded and shady.

Discussion opened by J. S. Templeton, Pinckneyville.

4:30—"An Attempt at the Laboratory Control of Scarlet Fever by Hemolytic Streptococcus Cultures".....Martin H. Seifert
.....Commissioner of Health, Wilmette

This paper is a summary of about six years work with hemolytic streptococcus cultures in a village of 16,000 people, where an attempt has been made to determine whether or not the isolation of scarlet fever patients, or contacts of scarlet fever patients until cultures no longer show hemolytic streptococci, will reduce the incidence of scarlet fever. In many instances also, school children with positive throats and who are in contact with positive cases have been isolated.

Believing the work is of sufficient scope to warrant further study, this is presented with the hope of interesting health officers in other communities.

Discussion opened by W. W. Bauer, Chicago.

Wednesday Afternoon, May 18, 1938
Gymnasium

2:30—"Venereal Disease: Some Reflections"
.....J. Howard Beard, Urbana

Intensive education, modern diagnostic methods, and the ability of the most gifted epidemiologists and therapeutists will be used to destroy the gonococcus and the spirochaeta pallida. These organisms will meet this knowledge and ingenuity with their versatility, protean manifestations, and ability to develop resistant strains. They will profit by the fallibility of tests, the tendency of individuals to weary of prolonged treatment and to avoid the inconvenience of the drugs used. The frequent inability of men to control their urges with their reason will give both bacteria a million reprieves. His-

tory will record not an engagement for a day, but a battle for a century.

Discussion opened by Arlington Ailes, La Salle.

3:00—"The Evanston Social Hygiene Clinic"

.....Winston H.

Tucker, Commissioner of Health, Evanston

The Evanston Department of Health maintains a social hygiene clinic which is supported jointly by the City of Evanston and the State Department of Public Health. Residents of Evanston with a venereal disease may obtain examination and treatment without cost. The clinic was begun on July 1, 1937, and during the first six months of operation, 300 persons presented themselves for care. Of this number, 205 were found to be infected with a venereal disease.

An outline of the set-up of a municipal social hygiene clinic in a small city will be presented, with methods of follow-up of contacts and those who discontinue treatment prematurely. Emphasis will be placed upon the importance of a complete medical examination of every patient before treatment is begun, in order that each case may be handled in the proper way.

Discussion opened by N. O. Gunderson, Rockford.

3:30—"Serological Control of Neisserian Infections by Means of a Bouillon Filtrate (Corbus-Ferry)—Progress Report".....

.....Budd C. Corbus, Chicago

At the present time standardization of the treatment of gonococcal infections does not exist. With the defensive mechanism of immunity in man established, a toxin discovered and a safe method of injecting it accepted, it is now possible to standardize treatment.

A patient with a positive gonorrhea complement fixation test is in a state of hypersensitivity to the gonococcus. He is desensitized to the gonococcus by giving the toxin intradermally. A gonorrhea patient with a negative complement fixation test is injected until he is in a state of hypersensitivity and is continued on the same management until hyposensitization is complete (Negative complement fixation).

No local treatment or medication of any kind is given, except sedatives when indicated. The use of haliver oil with viosterol is substituted for the old time balsam medication. Case reports will be presented.

Discussion opened by Harold F. Diller, Peoria.

4:00—"The Syphilis Control Program of the State Health Department".....

.....Noxon Toomey, Springfield

The Division of Communicable Diseases supplies free drugs and follow up field service to physicians for infective and non-infective cases of venereal disease, regardless of patient's finances. Method described systematically for procuring necessary drugs free. Reason stated for necessary standard requirements and pro-

cedures; also, the exceptions available for unusual and problem cases.

Stresses need for more attention to syphilis in obstetric and pediatric practice. Every pregnant woman should have a blood test for syphilis. Prophylaxis by treatment of infected mother. Start treatment early and continue to delivery, alternating arsenicals and heavy metals monthly, but always overlapping. Same principles for baby after birth. Dosages and techniques for infants and children will be presented.

Discussion opened by H. J. Burstein, Decatur.
1:30—"The Control of Venereal Diseases"

.....G. D. Taylor, Chicago

The primary function of public health officials is the control and eradication of communicable diseases.

Research, study, investigation and experimentation have produced measures which have been successful in the satisfactory control of other diseases—but these had not been applied to venereal diseases except sporadically, because until recently no public health official has had the temerity to compel the attention of the great American public to an educational and publicity campaign concerning the importance of these diseases as a public health problem.

Such interest and concern has now been aroused that the people are demanding that action be taken. The successful control of venereal diseases must include all measures which have been employed successfully against other diseases. These include educational, epidemiological and adequate therapeutic measures.

The cooperation of the medical profession is of greatest importance in venereal disease control, and any campaign must include the welfare and cooperation of the private physician.

Discussion opened by John J. McShane, Springfield.

Thursday Morning, May 19, 1938

Columbus Hall

Joint Session with Sections on Medicine; Surgery; Ear, Eye, Nose and Throat; and Radiology

(For program and complete abstracts of papers see Section on Medicine.)

Section on Radiology

Ralph G. Willy.....Chairman

Harry B. Magee.....Secretary

Tuesday Afternoon, May 17, 1938

Library

2:30—Chairman's Address.

2:45—"Radiologic Aids in the Diagnosis of Heart Disease in Children".....

.....Edmund G. Lawler, Chicago

Anatomical borders of the heart in the posterior— anterior, right anterior oblique, and left anterior oblique positions.

The heart as studied with the fluoroscope, teleoroentgenogram, orthodiagram and the roentgenokymogram.

The measured diameters of the heart and chest the norm of cardiac enlargement.

Auricular ventricular lesions. Pericardial changes in disease. Congenital heart disease with position defects and changes in the pulmonary conus.

Discussion opened by W. L. Crawford, Rockford.

3:15—"Gynecologic Radium Therapy".....

.....Harold Swanberg, Quincy

The uses of radium in modern gynecologic practice will be enumerated. Emphasis will be placed on the two principle uses of radium—in the treatment of benign uterine hemorrhage and uterine cancer. The advantages of radium over x-rays in certain forms of uterine bleeding and the importance of combined radium and x-ray therapy in uterine carcinoma will be emphasized; the excellent results in cervical malignancy secured at the University of Paris will be related together with the author's technic of radium application.

Discussion opened by Henry Schmitz, Chicago.

3:45—"X-Ray Therapy of the Uterus and

Adnexa"Edmund P. Halley, Decatur

Theoretical considerations and clinical results emphasize that deep X-ray therapy merits equal prominence with radium therapy in the treatment of malignancy of the uterine cervix.

The place of X-ray therapy in pathology of the uterine fundus, and adnexa will be briefly discussed also.

Discussion opened by Chester C. Doherty, Chicago.

4:15—"A Film Clinic and Round Table Discussion of Interesting and Unusual Cases will be presented by the following:

Roswell T. Pettit, Ottawa

Arthur Sprenger, Peoria

Ivan Brouse, Jacksonville

Henry Grote, Bloomington

C. L. Morris, Peoria

Cesare Gianturco, Urbana

W. H. Hartman, Macomb

Fred Decker, Peoria

This Film Clinic is not limited to members of the Radiological Section. Any member of the State Society is welcome to present a case or take part in the general discussion.

6:30—Radiological Dinner, Business Meeting, and Election of Officers.

Wednesday Morning, May 18, 1938

Columbus Hall

Joint Session with Sections on Medicine and Surgery

SYMPOSIUM ON INTESTINAL OBSTRUCTION

"Intussusception" . . Philip Rosenblum, Chicago
 "Some Pharmacological Considerations of Intestinal Obstruction".....

.....Carl Dragstedt, Chicago

"The Pathogenesis and Diagnostic Symptoms of Intestinal Obstruction".....

.....John A. Green, Rockford

"Some Physiological Principles Involved in Acute Intestinal Obstruction".....

.....Lester R. Dragstedt, Chicago

"Radiological Aspects of Intestinal Obstruction".....James T. Case, Chicago

"The Surgical Treatment of Intestinal Obstruction".....H. E. Ross, Danville
 (For abstracts of papers, see Section on Medicine.)

Wednesday Afternoon, May 18, 1938

Community Hall

Joint Session with Section on Surgery

SYMPOSIUM ON THE TREATMENT OF MALIGNANT DISEASE

"The Management of Carcinoma Patients by the General Practitioner".....

.....C. O. Heimdal, Aurora

"Cancer and Precancerous Conditions of the Skin".....Edward A. Oliver, Chicago

"The Treatment of Intracranial Gliomas"...

.....Harold C. Voris, Chicago

"Pneumectomy for Bronchogenic Carcinoma of the Lung"....W. E. Adams, Chicago

"Early Pathological Lesions of the Cervix and Endometrium"

.....Benjamin H. Orndoff, Chicago

"Treatment of Malignancies of the Colon and Rectum".....Lorin D. Whittaker, Peoria

Thursday Morning, May 19, 1938

Columbus Hall

Joint Session with Sections on Medicine; Surgery; Eye, Ear, Nose and Throat; and Public Health and Hygiene

(For program and complete abstracts of papers, see Section on Medicine.)

Rules Governing Presentation of Papers

"All papers read by members shall be limited to twenty minutes and remarks in discussion to five minutes, floor privilege being allowed only once for the discussion of any one subject.

"All papers read before the Society or any of its Sections shall become the property of the Society. Each paper shall be deposited with the Secretary of the Sec-

tion when read and the presentation of a paper to the Illinois State Medical Society shall be considered tantamount to the assurance on the part of the writer that such paper has not already appeared and will not appear in medical print before it has been published in the Illinois Medical Journal.

"A paper not heard in its scheduled turn shall be held subject to the call of the Chairman of the Section at the end of the regular session if time permits, or as an alternative at the end of the program.

"All subjects shall be confined strictly to the subject in hand.

"No paper shall appear in the printed transactions of the meeting unless read in full or in abstract."

(From the By-Laws of Illinois State Medical Society.)

HALL OF HEALTH

Elks Club Building

J. S. Templeton, *Chairman*. Pinckneyville

N. S. Davis, III, *Secretary*. Chicago

Booth A—"Hygeia, the Health Magazine."—American Medical Association.

Booth B—"Recovery."—Department of Public Welfare, State of Illinois.

Moving pictures showing the progress made by patients at State institutions who are receiving metrazol and insulin treatment for dementia praecox, beginning with the first treatment and showing the progress until recovery.

Booth C—"Trachoma Clinics."—Department of Public Welfare, State of Illinois.

This exhibit consists of charts and slides.

Booth D—"Sight Saving."—Illinois Society for the Prevention of Blindness.

The exhibit will include a demonstration of sight saving, map showing trachoma clinics in the state, and the prevention of eye injuries. Sight-saving classes in the schools of Illinois will also be brought into the exhibit.

Booth E—"The Doctor and His Patient."—National Association of Retail Druggists.

Booth F—"The Heart and Lungs Through Forty Centuries."—Northwestern University School of Medicine.

Steps in the development of modern knowledge of diseases of the heart and lungs. The exhibit will consist of pictures and suitable legends which will show the development of modern knowledge of diseases of the heart and lungs.

Lungs—Beginning with a picture of an old Egyptian model of the lungs, the course of development will be brought down through Hippocrates to Auenbrugger, Laennec, Koch, Roentgen and others. The principles of diagnosis and treatment of diseases of the lungs will be illustrated and explained.

Heart—Beginning with Galen's idea of the circula-

tion the course of development will be traced through Harvey to the modern knowledge of rheumatic heart disease, coronary thrombosis, the electro-cardiograph, etc.

The value of autopsies in the development of knowledge of the heart and lungs will be tactfully emphasized.

Booth G—"Essentials of Prenatal Care."—Department of Public Health, Division on Maternal and Infant Hygiene, State of Illinois, and University of Illinois College of Medicine, Department of Obstetrics and Gynecology.

(1) Essentials of prenatal care—history taking, physical examination, blood pressure, pelvic measurements, transparency of full term pregnancy, laboratory tests, diet, and other essentials comprising a complete prenatal care program.

(2) Physiology of pregnancy—The progress of pregnancy from fertilization to full term.

(3) The postnatal period—Essentials of postnatal care during lactation. Series of charts and drawings.

Booths H to O—"Public Health Service and Preventive Medicine."—State Department of Public Health, A. C. Baxter, Acting Director, Springfield, Illinois.

The exhibit portrays various functions of state and local health departments and gives essential information concerning the prevalence, seriousness and methods of controlling pneumonia, syphilis, diphtheria, typhoid fever and several other diseases.

Booth Q—"General Health and Educational Exhibit."—Illinois State Planning Commission.

Consists of about twenty charts, approximately 24x36 inches each, covering the general subjects of health and education in the State of Illinois.

Booth R—"School Tuberculosis Survey."—Municipal Tuberculosis Sanitarium, City of Chicago.

Illustrates by photographs and statistical charts the method of procedure and results of survey of school children of Chicago for tuberculosis, using the Mantoux Test, followed by x-ray of those who prove positive.

Booth S—"Nursing Education."—The Cook County School of Nursing.

The exhibit will consist of posters and general information regarding the facilities offered by the Cook County School of Nursing.

Booth T—"Nursing in Illinois."—Illinois State Nurses' Association.

The exhibit will consist of graphic charts illustrating nursing in Illinois, also exhibit material from the American Nurses' Association and the National League of Nursing Education.

Booth U—"Progress Through Education."—Woman's Auxiliary to the Illinois State Medical Society.

Posters, transparencies, mechanical material and exposition files showing progress through education in

therapy, and ultraviolet radiation. Demonstrational lectures will require from twenty minutes to one-half hour and an effort will be made to describe simply certain facts and principles in physics that bear directly on apparatus used in the practice of medicine. These demonstrations might be given in a temporary room in the main demonstration hall arranged conveniently.

Booth 3—"Fractures of the Lower Extremities."—James A. Jackson, The Jackson Clinic, Madison, Wisconsin.

Exhibit of: (a) Transparencies demonstrating various types of injuries to the lower extremities, including special instruments and appliances used in their management; (b) Transparencies showing various cases handled under the above management; (c) Models and diagrams illustrating aspects of this subject.

Booth 4—"Weak Foot—Pathogenesis and Treatment."—James Graham, Springfield, Illinois.

With drawings, models, x-ray plates and explanatory cards. The pathogenesis of each of the three main types of weak foot is illustrated. (Postural type; shortened Achilles type; and the anatomical type.) The treatment of these is illustrated by the same method. In the postural type, the role of corrective exercises is emphasized and explained. Each of the shoe corrections employed is able to be made in the physicians' offices (illustrated with models) or by a shoemaker under the direction of the physician. There are no factory made appliances.

Booth 5—"Catgut Absorption—Experimental and Clinical Study."—Hilger Perry Jenkins, University of Chicago, Department of Surgery, Chicago, Illinois.

An experimental and clinical study of the decline in tensile strength and ultimate absorption of plain and chronic catgut is presented; a series of transparent tissue specimens showing the status of the catgut at varying periods of time after implantation; specimens of catgut removed from the tissues at varying periods of time which are mounted on cards with full description of the loss of strength which was observed for each size used; and by photomicrographs showing the reaction in the tissues to the catgut.

Booth 6—"Apparatus for the Reduction of Fractures of the Forearm and Arm."—Alexander L. Stearns, Chicago, Illinois.

This apparatus can be used for reducing fractures of the arm and forearm. It is so constructed that controlled traction can be maintained during the reduction and the period of applying means of immobilization. Constant radiographic or fluoroscopic check-up can be maintained during the procedure. The reduction can be performed with the patient in either a sitting or prone position. The whole operation—reduction and application of cast—can be done by the surgeon alone, without any assistance. Therefore better results in treatment of fractures of the forearm and arm can be attained by: 1. Perfect or near-perfect reduction, and

2. Consequent adequate immobilization without movement of previously reduced fragments.

Booth 7—"Oxygen Therapy Apparatus."—David J. Cohn, Michael Reese Hospital, Chicago, Illinois.

The exhibit consists of several models of a new oxygen tent, using dry ice (carbon dioxide) as refrigerant. The use of this refrigerant makes possible a very compact, inexpensive, and efficient cooling unit of novel design. Circulation of the atmosphere within the tent is obtained without the use of a blower, and much more satisfactorily than in tents of conventional design.

Booth 8—"Skull Fractures."—Harry E. Mock and John L. Lindquist, Surgical Department, Northwestern University College of Medicine, and St. Luke's Hospital, Chicago, Illinois.

The exhibit shows need for improved management of skull fractures. Analysis of 3,000 cases collected and of 300 of authors' own cases. Cases grouped according to signs and symptoms. Cases grouped according to treatment. Analysis of the indications and value of spinal puncture. Analysis of operative cases. Models showing skull and brain pathology. Photographs, graphs, charts, and x-ray films.

Booth 9—"Dermatophytes and Dermatomycosis."—Tibor Benedek, Mycological Laboratory, Northwestern University College of Medicine, Chicago, Illinois.

Dermatophytes will be presented in uniform flake-culture as giant cultures. They will be shown as tube cultures in order to demonstrate the possibility of microscopical examination of the vegetation without destroying it. Further cultures in hanging drops will be prepared to show the minute microscopical structures of the different dermatophytes. Clinical pictures of dermatomycosis will be shown in photographs.

Booth 10—"Choroid Plexus Resection in Hydrocephalus." "Clinical Cystometry." Harold C. Voris and Herbert E. Landes, Loyola University School of Medicine, and Mercy Hospital, Chicago, Illinois.

Model (life size) of hydrocephalic brain with demonstration of operative approach and two types of technique of operation on the plexus.

2. Enlarged photograph of a newly developed cystometer. Description of technique, indications, and diagnostic value of clinical cystometry. Tracings of typical cystometric studies in various neurologic and urologic lesions.

Booth 11—"Mental and Emotional Aspects of Medical Practice."—Conrad S. Somer, Illinois Society for Mental Hygiene, Chicago, Illinois.

An exhibit of books. About 50 or 60 books from various publishers, also some pamphlets emphasizing aspects of mental disease, mental health, emotional aspects of organic disease, psychoneuroses and behavior problems of interest to the general practitioners. Dr. C. S. Somer will be present throughout the two and a half days of the meeting to discuss the books and answer questions. The purpose of the exhibit is to

acquaint the general physician with the available literature which will help him in dealing with the emotional and psychistic problems in his practice.

Booth 12—"Bronchography in Bronchial Asthma."—Emmet F. Pearson, Springfield, Illinois.

X-ray film demonstration with Bronchography. A series of x-ray films of the lungs taken of patients suffering from Bronchial Asthma following instillation of iodized oil, which illustrates the normal bronchial tree and various degrees of damage which result from asthma. It is essential to know the state of the bronchia in order to institute therapy and foresee the prognosis.

Booth 13—"Experimental Intersexuality in Rats."—R. Greene, M. W. Burrill, A. C. Ivy, Northwestern University College of Medicine, Chicago.

"Experimental Production of Momogeneous Osteoporosis in Dogs."—R. A. Bussabarger, Smith Freeman, A. C. Ivy, Northwestern University College of Medicine, Chicago.

Photographs, charts, whole mounts, and models for intersex exhibit. A chart and mounted bones and two stuffed and mounted dogs for the osteoporosis.

Booth 14—"Mold Allergy." (Diagnosis in Allergy.)—Samuel M. Feinberg, Theodore B. Bernstein, S. S. Rubin, Northwestern University College of Medicine, Chicago, Illinois.

The importance of inhaled fungus spores as causes of hay fever and asthma is stressed. Charts, maps, microphotographs and drawings illustrate the prevalence, geographic and seasonal distribution and morphology of the fungi. Other charts show the clinical importance, frequency and methods of diagnosis of mold allergy. An added feature of the exhibit consists of charts and illustrations showing the diagnostic procedures in allergy as a whole.

Booth 15—"A Classification of Non-Paralytic Strabismus."—George E. Park and G. P. Guibor, Northwestern University College of Medicine, and Children's Memorial Hospital, Chicago, Illinois.

A classification has been made of over 700 cases of concomitant strabismus, from the Orthoptic Clinics at Children's Memorial Hospital and Northwestern University. The essential purpose for preparing this data was to differentiate those types of strabismus amenable to non-surgical training and treatment from those amenable to surgery. Photographs and charts are to be used to show the characteristics of each type of squint, and the average number of cases recovering cosmetically from the appropriate treatment.

Booth 16—"Improved Home Apparatus for After-Care of Poliomyelitis."—American Physiotherapy Association. Visiting Nurse Association of Chicago.

Miniature model of home set-up for physical therapy treatment, including such equipment as a tank for underwater exercises and apparatus for lifting the patient in and out of the water; improvised portable cart and other appliances. Exhibit of photographs and models

of home-made apparatus for the care of patients; simple splints for maintaining correct posture and demonstration of the making of these splints.

Booth 17—"What Is Normal Blood Pressure?"—Samuel C. Robinson, Marshall Brueer, Chicago, Illinois. Charts, graphs, tables, three dimensional relief "maps," etc.

Booth 18—"Metrazol and Insulin Treatments for Dementia Praecox."—Illinois Department of Public Welfare. Henry Horner, Governor. A. L. Bowen, Director.

Exhibit will consist of moving pictures in combination with a lecture given to describe the treatment.

Booth 19—"Production of Genital Growth in the Male."—W. O. Thompson and N. J. Heckel, Rush Medical College, and Presbyterian Hospital, Chicago, Illinois.

It will be demonstrated that the anterior pituitary-like principle from the urine of pregnant women exerts a powerful stimulus to the growth of the genitalia of the human male. A series of large photographs will show marked genital growth from its use before and after the age of puberty, notably in patients with hypogonadism and undescended testes. Stages in the production of premature puberty following its administration will also be illustrated. Its use in the treatment of hypogonadism and undescended testes will be outlined briefly. The importance of avoiding marked genital growth in young boys will be stressed.

Booth 20—"Puerperal Sepsis."—Department of Public Health, State of Illinois. Henry Horner, Governor. Frederick H. Falls, Maternal and Infant Hygiene, and the University of Illinois College of Medicine, Department of Obstetrics and Gynecology, Chicago, Illinois.

Pathology—nine drawings and one graphic temperature chart. Drawings illustrate the various phases of the pathology of Puerperal Sepsis and its complications. History of Puerperal Sepsis—four charts containing portraits of Hippocrates, White, Holmes, Semmelweis, with descriptive paragraph listing their contributions to the subject. Treatment of Puerperal Sepsis—four drawings in water color 22"x24" showing (1) Fowler's position, (2) Blood transfusion, (3) Serum injections, (4) Phlegmasia alba dolens by leg elevation. There is also a graphic chart of Sepsis Mortality in Illinois.

Booth 21—"Newer Trends in Orthopedic Surgery, with Special Reference to Teaching."—Philip Lewin, Northwestern University College of Medicine, and Cook County Hospital, Chicago, Illinois.

The exhibit consists of translites, 8x10 x-rays, and anatomical models.

Booth 22—"Diagnosis and Treatment of Pneumonia."—Wayne W. Fox, Paul S. Rhoads, Northwestern University College of Medicine, Chicago, Illinois.

Charts showing distribution of types, technique of typing, dosage of serum, technique of serum admin-

istration, technique of oxygen administration. Demonstrations of both Neufeld and Sabin typing under the microscope, charts showing results to be expected from serum treatment.

Booth 23—"New U.S.P. and N.F. Preparations."—Illinois Pharmaceutical Association. Howard H. Zorn, Springfield, Illinois. National Association Retail Druggists, Interprofessional Relationships Committee, Mr. O. U. Sisson, Chairman, Chicago.

New U.S.P. and N.F. preparations presented by Illinois Pharmaceutical Association in conjunction with local Springfield Pharmaceutical Association. Actual preparations which can be tasted and tested in bottles, etc. Many of the preparations to be on exhibition were prepared by the University of Illinois College of Pharmacy. Others have been prepared by O. U. Sisson and other leading pharmacists catering to the physicians. Each preparation is prepared exactly according to the formula stated in the latest revision of the United States Pharmacopoeia and the National Formulary Book, latest revision. The entire exhibit will be attractively displayed and attended by Registered Pharmacists, who will be able to discuss with interested physicians any of the preparations, how they are prepared, etc.

* * *

Technical Exhibitors at the 1938 Annual Meeting

* * *

Allergia Products Company, Newton, Massachusetts.
A. S. Aloe Company, St. Louis, Missouri.
Arlington Chemical Company, Yonkers, New York.
Belgard, Inc., Chicago, Illinois.
CIBA Pharmaceutical Products, Inc., Summit, N. J.
DeVilbiss Company, Toledo, Ohio.
C. B. Fleet Co., Inc., Lynchburg, Virginia.
General Electric X-Ray Corporation, Chicago, Ill.
Gerber Products Company, Fremont, Michigan.
Hamilton-Schmidt Surgical Co., St. Louis, Missouri.
H. J. Heinz Company, Pittsburgh, Pennsylvania.
Horlick's Malted Milk Corporation, Racine, Wis.
Hille Laboratories, Chicago, Illinois.
Jones Metabolism Equipment Co., Chicago, Illinois.
Lea & Febiger, Philadelphia, Pennsylvania.
Lederle Laboratories, Inc., New York City.
J. B. Lippincott Company, Philadelphia, Pennsylvania.
M. & R. Dietetic Laboratories, Inc., Columbus, Ohio.
Mead Johnson and Company, Evansville, Indiana.
Medical Protective Company, Wheaton, Illinois.
Mellins Food Company, Boston, Massachusetts.
The C. V. Mosby Company, St. Louis, Missouri.
V. Mueller & Company, Chicago, Illinois.
Philip Morris & Co., Ltd., Inc., New York City.
Petrolagar Laboratories, Inc., Chicago, Illinois.
W. B. Saunders Company, Philadelphia, Pennsylvania.
Standard X-Ray Company, Chicago, Illinois.
Sutliff & Case Co., Inc., Peoria, Illinois.
John Wyeth & Brother, Inc., Philadelphia, Pa.

NOTES ON EXHIBITS

A. S. Aloe Company, in Booth Number 1, will display a general line of surgical instruments and equipment for the physician and hospital. The Aloe Short Wave Diatherm, the DeBakey Blood Transfusion Unit and many other specialties will be featured. Messrs. Drennan and Kruse, Aloe representatives, will supply those interested with brochures on Aloe Steeline, the most modern creation in physician's fine treatment room furniture.

Among the many books to be displayed in Booth Number 2 by the C. V. Mosby Company are:

The second edition of Watson's "Hernia," Rea's "Neuro-Ophthalmology."

The fifth edition of Porter & Carter's "Management of the Sick Infant."

The fifth edition of Crossen's "Operative Gynecology."

The sixth edition of Clendening's "Method of Treatment."

These recent releases will be supplemented by approximately 175 other texts.

Sutliff & Case Company, Inc., in Booth Number 3 are manufacturers of a complete line of pharmaceuticals; they will have on display as features this year Thio-Cara, Thiocyan-Tabs, Tin Ox Tablets, and Tin Oxide Compound Capsules. Sutliff and Case pharmaceuticals are always in line with the modern trend of things medical.

The physician who is served by our institution finds more than 1000 medical products from which to choose his weapons to fight disease and death. Many of our products will be on display this year, and our representative will be more than glad to discuss any of our many lines with physicians calling at our booth.

In addition to specialties and standard preparations, a complete line of physicians' supplies and sundries are handled for your convenience.

The Medical Protective Company, in Booth Number 4, will be represented by a man thoroughly trained in Professional Liability underwriting, and the company invites you to visit this exhibit. He is entirely familiar with the principles of the reciprocal rights and duties of a doctor and patient and with the circumstances peculiar to that relationship. He will be glad to explain how his company meets the exacting requirements of adequate liability protection, which are peculiar to the Professional Liability field.

New books on display at the Lippincott booth, Number 5 include:

Thorek—MODERN SURGICAL TECHNIC—2 volumes with more than 2,000 illustrations.

Bacon—ANUS, RECTUM, AND SIGMOID COLON—with 487 Illustrations.

Rigler—ROENTGEN DIAGNOSIS.

Wilson—FRACTURES.

McBride—DISABILITY EVALUATION.

And other new books.

The John Wyeth & Brother, Inc., in Booths Numbers 8 and 9, will exhibit a number of their pharmaceutical specialties, among them Silver Picrate for the treatment of trichomonas vaginitis, Kaomagma Intestinal Absorbent in the treatment of intestinal disturbances, Amphojel, Wyeth's Alumina Gel, Antacid, and Bewon Elixir, an especially palatable dosage form of crystalline vitamin B-1. All physicians are cordially invited to call at the Wyeth Booth and receive latest information concerning these products.

Gerber's, in Booth Number 10, invites you to inspect their strained foods which will be on display. Two kinds of literature, some for professional use and some for distribution to mothers or adult patients on therapeutic diets, are both available for your examination, and will be sent to you on request.

W. B. Saunders Company will exhibit at Booth Number 11 a complete line of its books on Medicine, Surgery, and Allied Subjects. Among the many outstanding works will be Warbasse-Smyth's "Surgical Treatment," the new Beckman's "Treatment," the new Cecil's "Medicine," Bickman's seven volume "Operative Surgery," Buie's "Practical Proctology," Tuft's "Clinical Allergy," Gifford's new "Ophthalmology," Padgett's new "Surgical Diseases of the Mouth and Jaws," Wiprud's "Business Side of Medical Practice," Herman's new "Urology," new edition of Andrews' "Skin Diseases," new (1938) Mayo Clinic Volume, Merritt & Fremont-Smith's "Cerebrospinal Fluid," Bastedo's "Materia Medica and Therapeutics," Mason's "Preoperative and Postoperative Treatment," Curtis' three volume "Obstetrics and Gynecology," The Medical Clinics of North America, The Surgical Clinics of North America, Griffith & Mitchell's "Pediatrics," and many other new books and new editions on a wide range of subjects.

Standard X-Ray, in Booth Number 12, will exhibit their Model "EBRF" Unit. This modern shockproof x-ray machine is designed for fluoroscopy and radiography in any desired position. It is extremely flexible, and ideally suited where space for installation is very limited. The "EBRF" unit has ample capacity for high speed chest work as well as general radiographic and fluoroscopic work.

The Standard X-Ray Company also manufacture many other sizes and types of x-ray apparatus, and can offer the proper equipment to best suit your need. Do not fail to stop and visit us.

Physicians are cordially invited to visit the new convention display in Booth Number 12 where Petrolagar Laboratories, Inc., will be represented by Messrs. Frisbie and Lombardo.

Petrolagar is an emulsion of pure mineral oil (65% by volume) and agar-agar, accepted by the Council on Pharmacy and Chemistry of the American Medical Association for the specialized treatment of constipation. Scientific drawings and literature on the subject of constipation will be available in addition to samples of the five types of Petrolagar.

The Mellin's Food Company in Booth Number 13. Fitting the food to the baby, the correct approach to bottle feeding, is the underlying principle of the easily workable method that employs Mellin's Food as the milk modifier. A discussion of this matter with physicians is sincerely desired and your visit to the Mellin's Food Company's exhibit will be greatly appreciated.

Mead Johnson & Company at Booth Number 14 are distributing this year an unusually fine souvenir item. It is not only beautiful but extraordinary because it contains no advertising. Ask for your copy of "Parergon."

The complete display of Mead Products includes two new ones.

Belgard, Inc., in Booth Number 15 will have on display the Guibor Stereoscope and the Dual Service Trial Case, along with many other unusual refracting aids manufactured by Belgard, Inc.

The Jones Metabolism Equipment Company in Booth Number 16 will feature as their display the Jones MOTOR BASAL metabolism apparatus.

A special feature of this unit is that it contains no water and requires no calculation in the determination of the basal metabolic rate.

The Exhibit of Allergia Bedding in Booth Number 17, intended for the relief of sufferers from Asthma, Hay Fever and Related Disorders will include a demonstration of dust produced by ordinary bedding fillers . . . cotton, kapok, feathers and hair, and will, by comparison, show the DUST-FREE qualities of Allergia pure silk filling material.

The Exhibit will also feature full size non-atopic DUST-FREE Allergia Pillows and a model of the DUST-FREE Allergia Mattress. We will invite physicians to avail themselves of free vials of Coca's Fluid Extract made from Allergia Filling Material for their use in making scratch tests.

Included with our showing of Allergia DUST-FREE Bedding is the KANTWET Crib Mattress, which not only offers a *WETPROOF non-rubberized* infant bedding piece, but also offers a *DUSTPROOF* protection to sensitive nasal membranes.

Nourishing, digestible, appetizing—these are three outstanding qualities for which HORLICK'S is famous, either the powdered or tablet form. Visit Booth Number 18. You will be interested in the many dietary uses—from infant feeding to old age—note especially the convenience of the Tablets, for interval feeding, in ulcer diets.

Lederle Laboratories, Inc., in Booth Number 19, will feature a seasonal display of Hay Fever, Poison Ivy and Allergenic products, as well as Clobulin Modified Lederle Antitoxins; Oral and Parenteral Liver and two new vitamin products:

Vi-Delta Emulsion (also available in capsule form)
Vitamin B Complex

also therapeutic sera for all types of pneumococcus pneumonia.

Samples and literature covering the two vitamin products and complete literature on antipneumococcic sera will be available to visitors.

The M. & R. Dietetic Laboratories, Inc., in Booth Number 20, will display Similac and powdered Soft-Kurd. Representatives will be glad to discuss the merits and suggested application of these products.

The C. B. Fleet Company will be found in Booth Number 22. PHOSPHO-SODA (FLEET): An ethical, concentrated preparation of the sodium phosphates in a stable solution. Phospho-Soda is a reliable intestinal and renal eliminant and detoxifying agent, acting quickly without griping or causing tenesmus.

Phospho-Soda (Fleet) has, for fifty years, been recognized by the medical profession as being the desirable choleric and cholekinetic. The ease of administration and flexibility of dosage gives Phospho-Soda (Fleet) a wide range of usage.

In booth Number 23, Lea & Febiger, represented by L. E. Drury, will exhibit the following new works:

Pohle's "Theoretical Principles of Roentgen Therapy," and "Clinical Roentgen Therapy"

Long & Goldberg's "Social Hygiene"

Craig & Faust's "Parasitology"

Fishberg's "Heart Failure"

Davidoff & Dyke's "Normal Encephalogram"

Saxl's "Pediatric Dietetics"

Rowe's "Clinical Allergy"

Brahdy & Kahns "Trauma and Disease"

Levinson & MacFate's "Laboratory Diagnosis"

Werner's "Endocrinology".

New editions will be shown of such standard works as MacKee's "X-Rays and Radium Therapy," Ormsby's "Diseases of the Skin," Joslin's "Treatment of Diabetes" and "Diabetic Manual," Wiggers' "Physiology," Gifford's "Ocular Therapeutics," Bridges' "Dietetics for the Clinician," and other new works and new editions.

The HAMILTON-SCHMIDT SURGICAL COMPANY of St. Louis will occupy Booth Number 24 during the 1938 annual meeting. They will show some Burdick Physio-Therapy equipment, also some new and interesting surgical instruments including the new Brad-Parker Lahey lock instruments. Mr. Charles Ritzen and Mr. M. J. Latshaw will be in charge of the exhibit.

The DeVilbiss Company has reserved Space Number 25 for the 1938 convention of the Illinois State Medical Society to be held on May 17, 18, 19, at Springfield.

The complete DeVilbiss line of atomizers, steam vaporizers and nebulizers will be on display. Specially featured in the exhibit are illustrations graphically showing the superior coverage afforded by the atomizer in the application of solutions to the nose and throat. These illustrations are based on x-ray research.

Copies of the illustrations for reference may be se-

cured from Mr. E. B. Harvey, DeVilbiss representative in charge of the display.

It is the policy of the General Electric X-Ray Corporation to try at each meeting of the Illinois State Medical Society, to have an interesting exhibit for the visiting doctor.

All we ask is that he pay us a visit at our Booths, Numbers 26 and 27, and meet our representatives who are very helpful in the matter of x-ray and physical therapy problems.

Philip Morris & Company Ltd. Inc. in Booth Number 28 will demonstrate the method by which it was found that Philip Morris cigarettes, in which diethylene glycol is used as the hygroscopic agent, are less irritating than other cigarettes.

Their representative will be happy to discuss researches and problems on the physiological effect of smoking.

The Arlington Chemical Company, in Booth Number 29, will again exhibit their products at the Illinois State Medical Society annual meeting. They will again feature their Biological and Pharmaceutical Products. They are offering a new diagnostic protein outfit that has just been released consisting of eighty of the most common causative factors in allergic conditions. The price of the set is \$9.75. The physician in charge of the booth will be happy to discuss any allergic problem.



The H. J. Heinz Company will greet you in booth Number 30. In order that you may see the natural fresh color and uniform consistency of Heinz Strained Foods our display presents in an attractive manner all twelve varieties. Naturally, you have some questions as to their preparation and uses. We therefore invite you to let our representative serve you in this respect.

We will be glad to send you a copy of the fifth edition of our Nutritional Chart upon registration at our exhibit.

At the CIBA Booth, Number 50, the well-known line of CIBA specialties will be displayed, and the two latest products, Perandren, the synthetically prepared chemically pure testis hormone—and Transentin, a new non-narcotic antispasmodic, will be featured. Representatives from the firm will be in attendance to discuss any questions the physician may wish to ask regarding these specialties.

V. Mueller & Company, in Booth Number 53, will feature bone surgery equipment, including the Callahan-Scuderi outfit and Henderson Leg Screw for the treatment of fractures of the neck of the femur. Many

other new and interesting items, as well as a representative staple line, will be shown.

In the Hille Laboratories' Booth, Zinc Borate, with and without ephedrine, will be featured. Also Colloidal Mercury Sulfide and probably Bismo-Rhodanol.

We have prepared—for clinical trial only—a colloidal copper sulfide solution for oral administration in diabetes. A well-studied series of diabetics were treated with copper sulphate at the metabolic clinic of the University of Graz. The report shows that they were able to reduce the insulin requirements of these cases fully 50% and were able to carry the lighter type cases along on copper alone.

We will furnish this copper preparation to those physicians who would care to test out the claims made for oral copper medication as an insulin sparer.

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NINETY-EIGHTH ANNUAL MEETING
SPRINGFIELD, ILLINOIS

May 17, 18, 19, 1938

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SHELL-FISH POISONING

In San Francisco in July, 1927, an adult ate a dozen and a half mussels for supper and died of respiratory paralysis five hours later while asleep. A 12-year-old boy ate eight raw mussels and died three and a half hours later. A boy 2 years old drank a small glass of broth with three mussels and died in five and a half hours. Three other deaths occurred at that time, and a total of 102 persons from the central California coast area became ill of mussel poisoning. Since then, including the year 1936, ten more deaths have been known to occur from mussel poisoning in Alaska, in Oregon and along the California coast. In all, 243 persons have been made ill, all suffering unmistakably from mussel poisoning. Sixty-two cases were reported in California in July and August, 1929, with four deaths, two cases in 1930, forty cases in June and July, 1932, with one death, twenty-two cases in 1933 with one death, twelve cases in 1934 with two deaths, and three cases in 1936 with two deaths. The disturbance centered in the neighborhood of the Golden Gate extending roughly one hundred miles north and south. Outbreaks of shell-fish poisoning have been reported from Scotland, Germany, Norway, France and Japan. Compared with the European outbreaks, the California epidemics involved much larger areas.—J. A. M. A.

Original Articles

INTERSTITIAL KERATITIS TREATED WITH ZINC IONIZATION

Preliminary Report

SAMUEL M. EDISON, M.D.

CHICAGO

Definition. Interstitial keratitis is a disease coursing from an acute to subacute into a chronic inflammatory condition of the substantia propria of the cornea, without previous involvement of the anterior or posterior surfaces, the exact etiology of which is unknown. It invariably reacts on the iris, ciliary body or uveal tract, resulting in opacities of the cornea by virtue of destruction of the corneal lamellae, associated with cellular infiltration, vascularization and scar tissue formation.

Differential, Diagnosis. In order to ascertain that one is dealing with a definite syphilitic interstitial keratitis, it is necessary to differentiate this form from the following group of deep keratitis, which to all appearances resemble and may be mistaken for the entity being discussed.



Fig. 1. Tuberculous Interstitial Keratitis.

CLASSIFICATION OF DEEP KERATITIS

1. *Tubercular Interstitial Keratitis.* True syphilitic keratitis may be differentiated from tubercular interstitial keratitis with difficulty. The influence of the tubercle bacillus in producing interstitial keratitis is disputable. Many

cases are mixed infections; the patients showing positive skin tests to tuberculosis as well as positive blood Wassermann reactions. The possibility of occurrence of tuberculous interstitial keratitis seems to be proven by the fact that Roy and Alveraz¹ found tubercle bacilli in the cornea. The rare finding of the tubercle bacilli in the cornea is similar to the rarity of the presence of the treponema in the cornea. The characteristic differential point is that in tubercular involvement, the infiltration seems to occur in the middle of the deeper layers of the cornea and is frequently limited to only a sector of it, usually in the lower portion where it assumes a very dense type of nodular infiltrate. The vascularization is also localized, not diffused like in the syphilitic type, also it is more frequently unilateral. The clinical course is usually similar to the syphilitic type, but the clearing of the cornea is much less rapid and not as complete and the end results are localized leucomata.

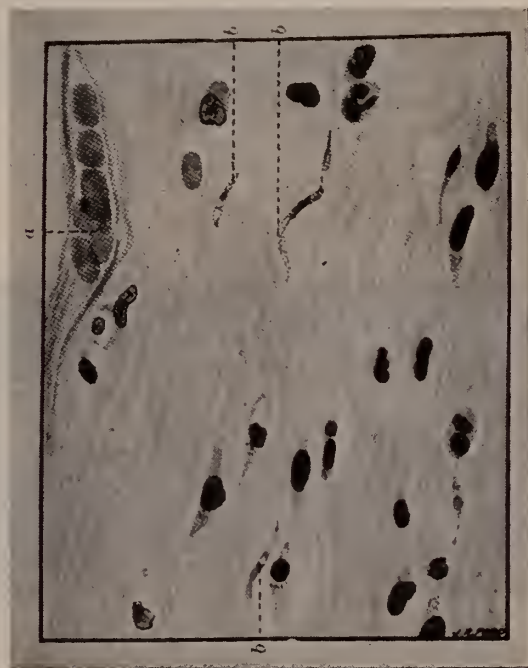


Fig. 2. Interstitial keratitis in Trypanosomiasis showing the parasites in the cornea. a. Red corpuscles in capillary. b. Trypanosomes. The drawing is composite since the whole of a trypanosome is not seen in one position of the focusing (Neame).

2. *Trypanosomiasis.* Interstitial keratitis due to trypanosomiasis² is a rare complication of sleeping sickness and is reported to be usually bilateral, is accompanied by the same subjective symptoms, and runs a very acute course which

Read before the Midwestern Ophthalmological Society at its Second Annual Session on March 9, 1938.

may be followed by necrosis of part of the cornea with formation of permanent scars. It appears to be a result of direct infection, and yields to treatment with drugs.

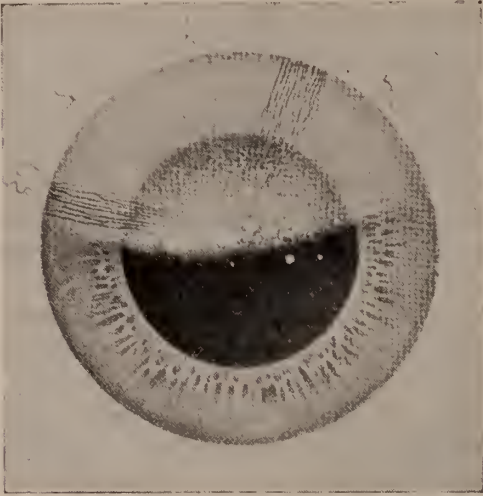


Fig. 3. Keratitis Profunda showing deep infiltrate with zonular vascularization and keratic precipitates (after Schieck).

3. *Associated with Anterior Uveitis.* Keratitis profunda as a complication of anterior uveitis usually affects adults, is unilateral and is less diffuse and not as severe as the syphilitic type and the clinical course is much shorter, with less permanent scarification.

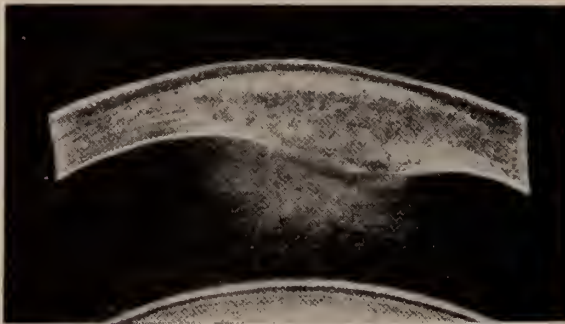


Fig. 4. Keratitis Disciformis. Slit-lamp section of cornea. (Harrison Butler.)

4. *Fuchs' Keratitis Linearis Migrans.* Fuchs'³ keratitis linearis migrans is a rare manifestation of deep keratitis in which a line of opacity in the deep corneal parenchyma is associated with precipitates. It slowly travels from one side of the cornea until it covers the entire cornea. Fuchs thought that this migratory type is also due to syphilis, but this has not been substantiated by other investigators.



Fig. 5. Keratitis Disciformis. (Harrison Butler.)

5. *Keratitis Disciformis, Fuchs.* Keratitis disciformis, Fuchs⁴ is characterized by a discoid opacity in the corneal parenchyma, is often concentric and is probably due to infection of the cornea from the outside by agents of low virulence, or virus infection following trauma. It runs a very chronic course. The cases reported have shown a swelling of the corneal lamellae in the infected area, with necrosis, not much infiltration and absence of organisms. The onset of this disease is marked with considerable irritation, pain, photophobia, lacrimation and circum corneal injection. There is a haze caused by minute grey spots slowly spreading, eventually showing concentric laminations in the lamellae giving the appearance of a disc. No vessels as a rule appear early, but may appear later in about six to ten months after the onset. The prognosis is good because the lesion remains circumscribed. Vogt in his slit-lamp examinations of these cases, is responsible for the thorough description of this form of keratitis.



Fig. 6. Keratitis Punctata Profunda in hereditary syphilis.

6. *Deep Punctate Keratitis, Mauthner.* This was first described by Mauthner;⁵ it is a rare

form of deep keratitis characterized by small discrete punctate opacities in an otherwise clear cornea, occurring in the course of syphilitic iritis. The opacities are small and sharply defined, gray-white in color, are situated deep in the par-

clinical feature of this disease is, that there is a deep infiltration triangularly shaped with its base at the limbus, which, in about three or four weeks, develops into a nodular yellowish pustular mass in the deep layers of the cornea and is associated

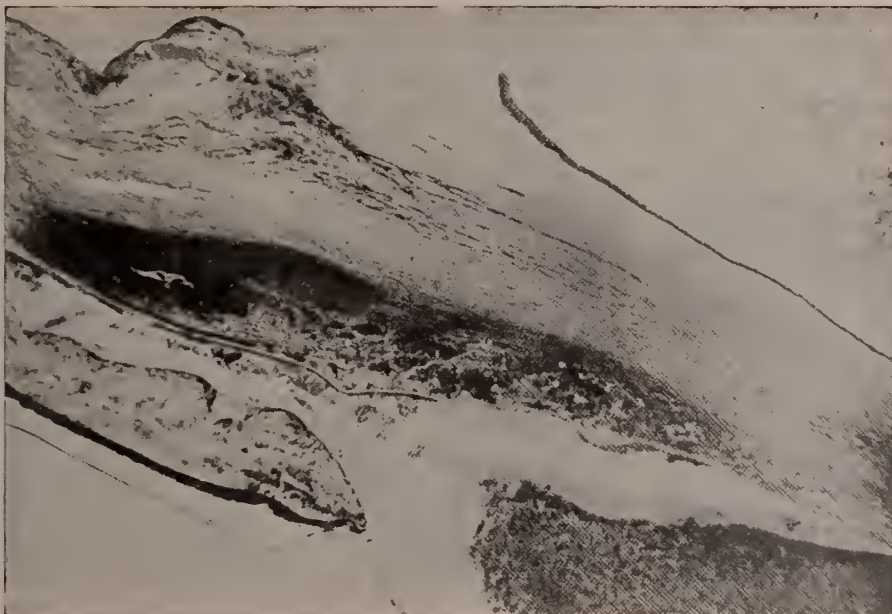


Fig. 7. Deep Pustular Keratitis, in a syphilitic. The abscess in the deepest layers of the cornea near the limbus is bursting into the anterior chamber.

enchyma of the cornea, are not accompanied by symptoms and do not vascularize.

7. *Posterior Abscess and Ulcer of the Cornea.* A purulent inflammation may occur in the deep layers of the corneal stroma forming an abscess which may burst through Descemet's membrane resulting in an internal ulcer. There may be a nodular infiltration of the cornea, bulging backwards into the anterior chamber.



Fig. 8 (Left) Deep Pustular Keratitis, in a syphilitic; a diagrammatic reconstruction of the slit-lamp appearance.

8. *Deep Pustular Keratitis.* The characteristic

with iritis and marked hypopyon. The symptoms are moderate pain and photophobia with ciliary injection. Usually it is unilateral and occa-



Fig. 9 (Right) Ring Abscess. Following a perforating central wound. Note the situation of the peripheral infiltration, central to which the cornea is necrotic. The epithelium has disappeared except at the limbus.

sionally there are many pustules present. Some of them may break through Descemet's membrane.

9. *Ring Abscess of the Cornea.* This is a rare form of peripheral annular infiltration of the cornea and is very destructive, involving a great area of the cornea with necrosis; the necrotic center is surrounded by a girdle-like infiltration. It is usually due to a virulent local infection following trauma. This disease runs a very dramatic course with great and rapid involvement of

the cornea which becomes hazy and in which the corneal epithelium disappears in mass, setting up a panophthalmitis. The prognosis is very bad.

Incidence. Inasmuch as the vast majority of interstitial keratitis occurs in syphilitic persons, it has been unanimously confirmed and accepted since Hutchinson's classical description of the disease, that diffuse parenchymatous (Interstitial keratitis) is of syphilitic origin, as will be seen from the following statistical data.

Statistical. In one group of 74 cases in a large



Fig. 10 (Left) Girl age 20 with characteristic facies of cong. syphilis. Prominent frontal eminence. Saddle-shaped nose and keratitis parenchymatosis.



Fig. 11 (Middle) Boy age 15 with interstitial keratitis, Hutchinson's teeth and depressed bridge of nose.

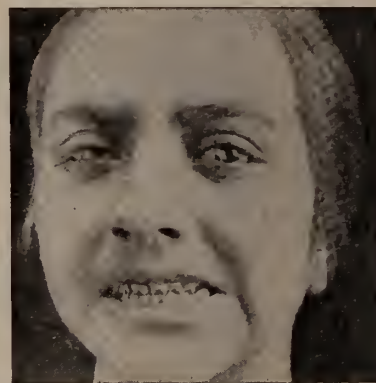


Fig. 12 (Right) Age twenty, has been suffering from interstitial keratitis the past three years. Has typical Hutchinson's teeth and warped intelligence.



Fig. 13. Interstitial keratitis with bony lesions of the tibia (saber shin) and other stigmata of inherited syphilis.



Fig. 14. Interstitial keratitis, general deafness and rhinitis. Thick skin and fissured in places.

eastern charity hospital,⁶ 90% had positive Wassermann reactions; 3% of these had acquired syphilis.

Cunningham, in a series of 435 cases, found evidence of hereditary syphilis in 401 cases; nine were acquired syphilis and two were of tubercular origin.

In 322 cases tabulated from four large Chicago clinics and hospitals over a period of eleven years, 90% were due to hereditary syphilis, 3.5% to acquired syphilis, 6.5% due to other causes.

Herzan and Hossman reported 433 cases in which 92.6% had positive Wassermann reactions.

Treponema. While the aforementioned clinical data should almost convince us that the disease is due to the treponema, it is an outstanding fact that the organism is rarely found in interstitial keratitis of syphilitic origin in the human. Furthermore, it is well known that anti-luetic treatment in this type of cases, is practically of no avail and many cases develop interstitial keratitis during a course of treatment with arsenicals, while the infection elsewhere in the body is improving. If syphilitic interstitial keratitis were due to the treponema, we should expect different results. The argument that arsenicals may not readily reach the avascular cornea is untenable, because in interstitial keratitis in animals due to trypanosome infection, where the organism is definitely found in the cornea, it has been demonstrated that a single injection of an arsenical clears and sterilizes the cornea in twenty-four hours, demonstrating that arsenicals do reach the cornea rapidly via the limbal vessels through the aqueous.

Age. In children, interstitial keratitis is a late manifestation of hereditary syphilis. It is relatively rare under five years of age; between the ages of five and ten the incidence is about 23% and the frequency between the ages of ten and fifteen years is about 21%; between fifteen and twenty, about 20%; between twenty and twenty-five, 14%; from twenty-five to thirty years, 7.5% and past that age the incidence falls rapidly to about the age of forty, so that only 4% of all cases occur in the last group. After the age of forty, the disease is very rare.

In the hereditary type both eyes are usually affected, although it may begin in one to be followed a few weeks later in the other eye. In about 75% of the cases the second eye becomes involved inside of a year, though occasionally

many years may elapse before the other eye becomes involved.

Acquired. In acquired syphilis the incidence of interstitial keratitis is only about 3%; it is usually unilateral and may come on soon after the initial lesion; but as a rule, like in the hereditary forms, it is a late manifestation occurring about ten years after infection.

It is mentioned that in acquired interstitial keratitis, the incidence is very frequent in cases where the primary lesion was situated close to the eye. The clinical picture and course of the disease is similar to the hereditary type, excepting that it is more amenable to treatment with anti-luetic remedies, is milder and is limited to a sector shaped area of the cornea.

ETIOLOGY

Herpes. Parenchymatous keratitis with ulceration and vesicular formation⁷ has been found as a complication in herpes zoster. Deep keratitic infiltration without epithelial changes, with changes in the stroma of the cornea, without vascularization, has been noted in several cases where no evidence of syphilis or tuberculosis was found.

Postinfluenzal. Doggart⁸ reports eight cases of acute parenchymatous keratitis occurring during convalescence from influenza. They were all unilateral, and accompanied by iridocyclitis with large K.P. The anterior and middle layers of the cornea were involved with grey dot-like opacities. The epithelium was not eroded. No vascularization occurred.

Sex. Age has been discussed under a previous heading and it was noted that the vast majority of cases of congenital keratitis occur early in life. As far as sex is concerned, it is generally agreed that in the hereditary types females are more susceptible than males, 61% in females and 31% in males and in the acquired types, females are even more susceptible than males, the percentage being females 68% and males 31%.

Endocrine. Because of these incidences, and also because of the characteristics of many of the patients, it is thought by some that endocrine disturbances, which themselves were brought about by the infection with treponema, may have much to do with the corneal changes.

Trauma. All agree that trauma is a precipitating factor in some cases of interstitial keratitis in both types, and plays an important part in a goodly per cent. of all cases. Some give it as

high as twenty per cent. It seems that in presensitized or evolutionized corneae with treponema, there is a potential hypersensitivity of the cornea and that it is ever ready for a sudden attack of interstitial keratitis as a result of trauma to the eye.

Because of the rarity of positive clinical findings of the treponemata in the corneae of syphilitic interstitial keratitis and also because of the poor response to anti-syphilitic treatment in these cases, the matter of the direct causative agent and the mechanics of the pathology remains a disputed matter.

Experimental. Experimentally, interstitial keratitis has been produced in animals,⁹ either by direct transplantation of syphilitic material into the eye, or through metastasis after inoculation in distant organs of the body, and treponemata were recovered from the corneal lesions in considerable numbers no matter where the lesions were located in the cornea. The organisms seem to invade the cornea from the anterior chamber angle.

Large numbers of treponemata have been recovered from syphilitic fetuses and new-born infants without any pathologic findings in the cornea. While in active cases of syphilitic interstitial keratitis, the organism is rarely found.

Allergy. For the reasons above stated, some investigators regard the disease as of allergic origin,¹⁰ presumably caused by the sensitization of the corneal tissues through a previous invasion, congenitally or shortly after birth by the treponema. This sensitization and alteration of the corneal tissue character not only predisposes it to attacks of interstitial changes, cell deposits and vascularization, but it also changes the character of the natural corneal reactions to arsenicals. It is therefore presumed that a syphilitic individual is allergic to the syphilitic virus.

Whether the allergic condition, if responsible, is a simple one is not known. Some patients have given a positive Mantoux as well as a positive Wassermann and Kahn reaction.

Sensitivity. Cutaneous tests¹¹ to determine sensitivity of the cornea with corneal tissue from positive luetic interstitial keratitis cases were tried and were negative. Control tests with patients' serum and luetin were also made and they were all negative except those with luetin.

It is admitted that there is no way to determine hypersensitivity to syphilis in man because

at present there is no satisfactory antigen. So we must depend upon certain clinical and pathological findings in the study of allergy in syphilis in the human.

PATHOLOGY

The pathology of syphilitic interstitial keratitis must be studied in its various stages, as there is no constant histologic picture of the disease and it varies with the course, duration, severity and complications, so that even the end results are different because of the marring, destruction, alteration and replacement of tissues. Essentially the pathology consists of necrosis of the corneal lamellae and infiltration with cellular elements, mostly lymphocytes, followed by vascularization and scarification.

It is distinguished clinically from other forms of deep corneal infiltration, mainly by the involvement of the inner layers of the corneal stroma. Wandering cells and blood vessels grow into the lesion in the acute stage, forming a characteristic palisade all around the cornea. At a later stage, repair takes place by proliferation of fixed corneal cells and fibrous tissue formation. Conspicuous in the pathology are the new blood vessels in the substantia propria which is, of course, a defensive mechanism and is of great benefit. When all signs of inflammation have subsided, the vessels remain empty and flattened between the layers of the corneal lamellae. The endothelial layer is studded with deposits of leucocytes. Descemet's membrane may become irregular and wrinkled and may even rupture. Dense infiltration of leucocytes around Schlemm's canal is found pushing forward to the sclera, while at the same time evidence of iritis, cyclitis and anterior chorioiditis are present.

Chorioidal changes¹² may occur both in the eye affected and the non-keratitic eye, either as a complication during the inflammatory stages of interstitial keratitis or it may be found as an independent pathologic entity having occurred prior to the keratitic attack. It is found in the form of large yellowish-red spots, with or without pigment. These spots coalesce and form large patches.

DIAGNOSIS

Subjective Symptoms. The subjective symptoms are rather severe, starting with pain, lacrimation, photophobia and blepharospasm. Hazy vision due to circumcorneal injection and cloudiness of the corneal epithelium and endothe-

lial edema occur. Deposits of cells in the corneal stroma and all other layers of the cornea are likewise causes of the haziness of the cornea.

Objective Findings. The initial stage lasts from one to two months when it reaches its height. It always takes a chronic course after the inflammation subsides, then tends to heal rather rapidly. However, it again shows up and especially in the center of the cornea which remains cloudy, sometimes for a year or two before the disease comes to an end. In general, it can be stated, that within a short period of the initial onset of the symptoms there follows a progressive stage. The cornea becomes cloudy as stated above, due to infiltration and the appearance of blood vessels; thereafter for about two or three months there follows the so-called florid stage, during which time the cornea may remain in an acutely inflamed condition, when marked vascularization takes place rendering the cornea uniformly dirty red (salmon patches or streaks).

the ophthalmoscope but with the slit-lamp examination, the diagnosis is not difficult in any stage of the disease.

Serologic examinations usually give positive Wassermann and Kahn reactions. In congenital cases, other luetic stigmata are frequently noted such as Hutchinson's teeth, a condition whereby the upper central incisors of the permanent teeth are notched and peg-shaped, shorter and narrower at the cutting edge than at the root. Deafness may be present.

Sometimes a typical facial aspect is present such as prominent frontal eminence, saddle-shaped depressed bridge of nose, retarded growth and stunted intelligence. A thorough family history may disclose other members possessing evidence of syphilis.

SEQUELLAE

The corneal sequellae are often marked and variable. The empty vessels leave a haze, and if the disease lasts a considerable time the precipi-

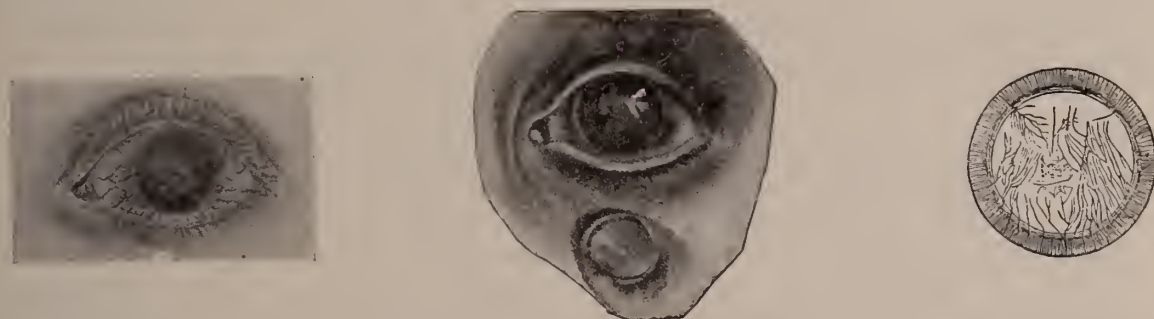


Fig. 15 (Left) Interstitial keratitis with salmon patch of the upper half of the cornea.

Fig. 16 (Center) Parenchymatous keratitis; the inflammation began three weeks ago, and the cornea is already to a large extent, covered with an opacity which began at the upper and outer margin. The opacity was soon followed by marked vascularization. That the

keratitis is diffuse is recognized by the ill-defined delimitation of the infiltrated area. Cause, hereditary syphilis.

Fig. 17 (Right) Corneal magnification representing the end result of a case of interstitial keratitis in which the empty vessels remain after all other signs of the disease have disappeared.

The vessels begin to shrink, the symptoms subside and the haziness gradually disappears. This haziness of the cornea, which is due to changes in all the layers of the cornea, may reduce vision to a marked extent and makes the cornea look like frosted glass. The epithelial layers lose their luster and edema is present. In the deeper layers of the cornea the cellular and vascular infiltration appear like isolated maculae, which increase in number and coalesce forming a central haze.

Wrinkling of Descemet's membrane may occur and keratic precipitates, associated with anterior uveitis, are invariably present. Some of the changes may be detected with indirect light and

tates remain, leaving a permanent opacity of a milky appearance. If a rupture of Descemet's membrane occurs, it leaves a permanent scar with considerable loss of vision. The damage to the endothelial layer may leave ridges as a result of hyalin or connective tissue changes. The cornea may show calcareous degeneration, or a marked thinning which may lead to ectasia. There may be synechiae as a result of the uveitis, as well as vitreous opacities. Secondary glaucoma or even phthisis bulbi may be end results.

PROGNOSIS

Taking into consideration the extensive in-

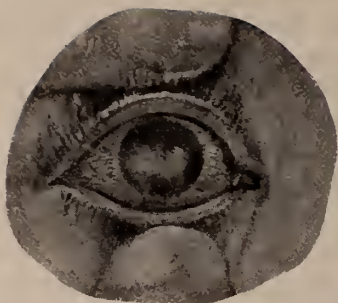


Fig. 18 (Left) Deep seated deposits in the cornea in interstitial keratitis still in process of resolution, giving the appearance of a milky haze.

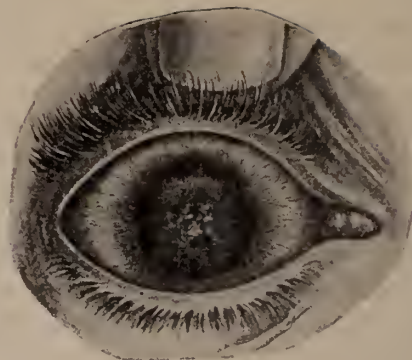


Fig. 19 (Right) Calcareous deposits in the deep layers of the cornea, an end result of interstitial keratitis.

flammatory changes which occur, the prognosis on the whole is good. Loss of vision in variable degrees always results. If the endothelial layer is involved, the loss of vision is most marked even as compared with dimmest corneal infiltration.

TREATMENT

General. The treatment is of necessity divided into general and local. Under general treatment one must consider anti-luetic to begin with although the local results were very disheartening; but this may prevent further syphilitic damage elsewhere.

Children tolerate bismuth therapy better than arsenic. Mercury is the remedy of choice in ill nourished children. In older children, silver arsphenamine is preferred.

There is a divergence of opinion regarding the local benefit from antiluetic treatment. Some claim that the results obtained with or without specific treatment are the same, while others

maintain they have obtained considerable results in checking the severity and duration of the disease, by specific treatment.

If the Mantoux is positive a course of tuberculin benefits some cases.

Tonics, fresh air, proper nourishment, sunshine and a change of climate are of great benefit. The child should be treated with consideration and kindness, should be encouraged and hope for recovery impressed upon him, especially during the prolonged stages of irritation.

Artificial fever production is of benefit either by machine or cabinet, or by intravenous injection with typhoid H antigen, as well as inoculation with malaria.

Protein shock therapy in other forms is also employed.

Local. Locally during the acute inflammatory stage, atropin should be used because of the ever presence of uveitis, heat in the form of fomentation or thermophore application at 120° F. for

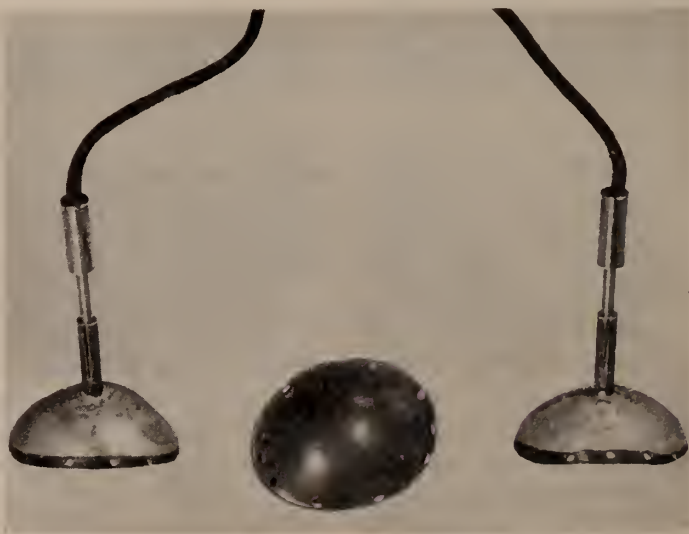


Fig. 20 Electrode used for zinc ionization of the eye, especially designed for deep keratitis treatments.

one minute. Subconjunctival injection of dionin, ultraviolet and iontophoresis have been used with little benefit. The author's method of zinc ionization has been of value in several cases.

The electrode¹³ consists of an elliptical cup-shaped piece of zinc, insulated on the outside (the palpebral side), with bakelite, and on the inside (the bulbar side), is fastened a piece of absorbing material to hold the electrolytic solution. On the convex side a hollow post is fastened for attachment to a wire.

METHOD OF APPLICATION

Three drops of butyn are instilled in the eye at five minute intervals. The negative pole, thoroughly saturated with saline solution is connected to a pad and fastened to the patient's body. The cloth of the electrode is saturated with a one per cent. solution of zinc sulphate and the positive pole of a galvanic battery is attached to the eye electrode and the electrode inserted under the lids. The patient is placed in a recumbent position and the current is turned on, not to exceed four or five ma. for five minutes. The eye is thoroughly irrigated after the treatment, as there is a considerable amount of zinc chloride formed in the conjunctival sac. The reactions from the treatments were never very severe, although a considerable amount of ciliary injection was noticed in all cases.

The local treatment for opacities consists of stimulating methods, such as dionin or mercury ointments and various subconjunctival injections but have been used with little success.

The fortunate part is, that spontaneous clearing of the cornea in the young is very marked. In the real severe opacities, surgery is resorted to in the form of corneal transplants.

SUMMARY AND CONCLUSIONS

1. Inasmuch as the vast majority of parenchymatous keratitis cases are of luetic origin, the diagnosis should in each case be established by a thorough family history and investigation.

2. In hereditary as well as in the adult types, serologic examination should be made and a spinal puncture done if necessary. Tests for tuberculosis should be made to determine sensitization. The chest should be x-rayed.

3. The corneal microscope or slit-lamp will frequently differentiate pathological types of deep keratitis.

4. Although there is a divided opinion as to the efficacy of anti-syphilitic treatments in the

hereditary type, it should, nevertheless, be employed in each case with the idea of benefiting the patient in other parts of the body.

5. General treatment, as outlined herein, is of great importance. Tonics, fresh air, proper nourishment, sunshine and a change of climate are of great benefit. The child should be treated with consideration and kindness, should be encouraged and hope for recovery impressed upon him, especially during the prolonged stages of irritation. Bismuth is the drug of choice in hereditary types and in ill nourished children, mercury is tolerated best. In the acquired type arsenicals should be used.

6. Protein shock therapy and artificial fever production are of benefit. Intravenous injections of typhoid H antigen is frequently used.

7. Local treatment cannot be generalized on account of the various pathologic stages. Each phase must be dealt with individually. During the early phases atropin should be used. To promote resolution, stimulating and irritating drugs should be tried, and in the later stages, zinc ionization with the method and electrodes used by the author seems to be of benefit in promoting absorption.

8. If the Mantoux is positive, in spite of the fact that there is a positive Wassermann, a course of tuberculin treatments should be instituted.

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ACKNOWLEDGMENT

The following is a list of authors and publishers to whom I am indebted for their kind cooperation, and for permission granted to use illustrations and quotations:

Kimpton, Henry; publisher, London, England, W. C. 1, 263 High Holborn, who has cabled permission to use the following illustrations from Duke-Elder W. Stewart; Vols. 1 & 2. Text-Book of Ophthalmology 1935 and 1938. Figures 1 to 10 inclusive.

Lea & Febiger, Philadelphia; External Diseases of the Eye, Atkinson, 1934. Figures 11, 12, 13, and 14.

SURGICAL EMPHYSEMA OF THE HEAD AND NECK FOLLOWING TONSILLECTOMY

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One of the rarest complications following tonsillectomy is emphysema. Reviewing the literature one finds but very few cases reported. Parish reported a case which immediately fol-

few other cases can also be found in the literature.

CASE REPORT

A. S., a female of forty years, has complained for the past few years of frequent sore throats, which have kept her in bed from a few days to a week at a time.

Her family history as well as her past history is essentially negative. Her physical examination was practically normal, with the exception of degenerated, atrophic tonsils. Laboratory findings: urine and blood negative. Coagulation time, normal.

Tonsillectomy was done under general anesthesia (ether) by the dissection and snare method. From the surgical point of view this was uneventful, with no gross hemorrhage. About fifteen minutes after the tonsillectomy was performed a swelling was noted on both sides of the neck (Figs. 1 and 2). The swelling progressed up the face to the zygomatic arches, and down on the neck to the upper part of the right chest, an-



Figs. 1 and 2. Emphysema following Tonsillectomy. Appearance of patient about 3 hours after operation.

lowed tonsillectomy. Richards described two cases in children of two and one-half and four years. Rosenheim discovered emphysema in an epileptic patient the day following tonsillectomy. Rubenstein had a similar experience in a man with arrested tuberculosis; the emphysema lasted six days. F. H. Von Hofe reported three similar cases in young children, a boy of two, another boy of two and a half and girl of four. A

teriorly. Palpation of these areas showed a definite crepitation due to air. This condition lasted about four days, then gradually subsided without any discomfort to the patient. Patient left the hospital in six days without any evidence of emphysema.

Comment: The occurrence of a surgical emphysema complicating tonsillectomy may be due to three causes.

1. Trauma to the tonsillar fossa during the surgical procedure, affecting primarily the supe-

rior constrictor muscle of the pharynx and the buccinator fascia. This complication is more common in children in which these anatomic structures are very fragile and sometimes deficient in development. (Stein.)

2. The forcing of air through the parotid duct to the parotid gland, with a diffusion of air to the surrounding tissues. It is difficult to explain how this air may enter the duct if not through very high pressure; probably an error of anesthesia technic, that is, too much pressure through the ether tip in the mouth might force the gas into the parotid duct.

3. The respiratory changes in the first stages of anesthesia might cause a rupture of lung alveoli forming an interstitial pulmonary emphysema, and diffusion of air to the lung hilus, and up into the mediastinum and neck. This is most probably the cause of the emphysema reported in this case, because the condition was bilateral; if it was due to trauma, which was not apparent, it would have been limited to one side.

No treatment was required for this complication. As in all the reported cases, it disappeared within a few days spontaneously.

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THE TECHNIQUE OF LUMBAR PUNCTURE

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The Wassermann and Kahn tests of the population undertaken in a nationwide scale will reveal many cases of unknown and unsuspected syphilis. Those persons showing a positive test will be examined by their own physicians or by physicians connected with institutions engaged in the care of the disease, to see how far the syphilis has progressed. In cases of hereditary

syphilis, latent syphilis, neurosyphilis and treated syphilis, it will be necessary to do a lumbar puncture to obtain spinal fluid for laboratory tests before discharging the patient. A large percentage of family doctors will be engaged to do lumbar puncture, and undoubtedly there will be those whose experience in doing it will be small or none. It is for those doctors that this article is intended.

It is best to provide the patient with hospital facilities for thirty-six to forty-eight hours, performing the spinal puncture in the operating or dressing room upon entrance to the hospital, and then putting the patient in bed without pillows. It is still better to perform the lumbar puncture in a private room in bed. In patients unable to afford hospital accommodations the puncture can be performed at home. It can also be performed in a laboratory or physician's office, in which event the patient should be instructed to bring with him a friend or member of the family. It must be remembered that the patient wishes to keep his misfortune to himself, so the physician should be discrete in his conversation in the presence of the outsider.

The physician should prepare his hands as for a major operation, and if a sterile gown is not available he should at least wear a rubber apron. If he feels clumsy with rubber gloves, he should paint around the fingernails with tincture of iodine. If spinal puncture is performed without aseptic and antiseptic precautions, the patient may be in danger of developing meningitis. The assistant locates the iliac crest and paints the skin over it with tincture of iodine. The spinal column for a distance of several vertebrae is also painted with tincture of iodine. Some physicians have a habit of outlining the iliac crest through a sterile towel or sheet. It is not always safe to do this since the physician may contaminate his fingers by contact with the unsterilized skin of the patient through an unnoticed small hole. A straight line drawn from the left to the right iliac crest crosses the fourth lumbar interspace. This will serve as the topographical point from which the physician can locate the place for the insertion of the needle.

The patient should lie on the operating or examining table with back toward the physician. The assistant or nurse stands in front of the patient and with one hand bends the head so that the chin touches the chest; with the other hand

he bends the thighs toward the abdomen. At the same time the patient is asked to bow out the spine. In sensitive patients the skin is frozen with ethyl chloride. Then with the index finger or thumb of the left hand the physician marks the point of insertion of the needle. He holds the needle not too close to its end and not by the butt. He inserts the spinal needle into the skin in such a manner that it enters beneath the upper border of the lower spinous process, directly at a right angle to the axis of the spinal column. It should be kept constantly in the midline, otherwise the point of the needle will strike bone. In order to prevent this, the physician has to gauge the direction carefully and maintain that direction. If it is difficult to maintain the direction with the patient lying on the table, or if the patient is emotional or sensitive and by moving a little changes a given position, the patient should sit down on the table. The assistant standing in front should bend the patient's head in the same manner as in the recumbent position, and the patient is instructed to arch the back. It is easier in the sitting position to gauge and maintain the direction. If the puncture is performed with the patient lying on the table, the physician should be seated; if the patient is placed in a sitting position, the physician should stand. The tissues are entered in the following order: skin and subcutaneous tissue, lumbodorsal fascia, supraspinal ligament, interspinal ligament, ligamenta flava and dura mater; on going through this membrane we feel the characteristic snap and also meet with less resistance. Then we withdraw the stylet and enter the arachnoidea. At this point we must watch for the escape of spinal fluid. If the fluid flows pure without any blood we collect it in a container (150 drops or approximately 10 c.c.) for laboratory tests. After that we press the skin with the index finger in the region where the needle was inserted and with the other hand withdraw the needle quickly. Sterile cotton is applied to the point of insertion of the needle and held in place with collodion or adhesive tape. The patient is instructed to lie on the abdomen for three hours to permit the formation of fibrin clot.

Let us now trace the sources of technical errors. If blood is present we collect it in the first container. The second container is used for the second portion which may be slightly

cloudy or clear, and the third container should have only clear fluid. The presence of blood will interfere with the cell count, globulin test and colloidal gold test. If only blood continues to trickle, then we must withdraw the needle immediately since we have struck a spinal vein. In case the needle is in the canal and the fluid does not flow out, which happens when the nerve fiber of the cauda equina touches the opening of the needle, it is necessary to withdraw the needle a little or rotate it; if no fluid escapes then withdraw the needle entirely and reinsert it.

If the patient does not bend over sufficiently, or if insertion is made much below the lower angle of the upper vertebra, the needle may strike the bone. Pease cautions that the needle may also, if pushed too far, strike the intervertebral disk and enter it or strike the vertebral body. In flexing the spine, due to closer approximation of the vertebral bodies anteriorly, increased intradisk tension reflects in the weaker posterior portion, causing a slight bulging of the disk into the neural canal. If the needle is pushed too far it could strike the intervertebral disk and if it enters the disk the nucleus pulposus will escape into the lumen or around the needle. This accident may lead to the development of pain in the lower part of the back, limitation of motion of the lumbar spine and weakness of the muscles of the back. On x-ray plates thinning and narrowing of the intervertebral disk is found.

For treatment it is better to employ a competent orthopedic surgeon. Compare, in discussing Pease's paper, states that it has to be remembered that the danger of injury to the intervertebral disk by lumbar puncture needle is much greater in young children than in adults. The younger the child the more fluid is the nuclear material. As the person grows older the disk becomes more dehydrated and it is difficult to express any fluid from it.

It is unnecessary to discuss the statement of the doctor who failed to obtain the spinal fluid, that "patient has no spinal fluid." Human beings have from 50 to 150 c.c. of spinal fluid. Or it may be unnecessary to discuss cases of extreme carelessness and absence of elementary knowledge of the technique of lumbar puncture. We witnessed an otherwise dexterous surgeon attempting a lumbar puncture while standing behind the patient who was seated on a small round chair. The surgeon was pushing the needle with short

jerks, and the patient jumping after every push, traveled with the surgeon behind him from one end of the operating room to the other. Fortunately the needle did not break, and the attempt at lumbar puncture was discontinued. Frequently the needle is inserted ten to fifteen times by inexperienced physicians without result, causing unnecessary torture to the patient and loss of complete self-confidence of the physician.

Anyone desiring to learn the technique of lumbar puncture is advised to watch it done by a skilled physician several times, and then do it himself under guidance until skill is acquired. One has to remember that there is nothing to be ashamed of should he fail to learn to perform lumbar puncture. The technique cannot be learned from books or oral instruction, but only from actual experience in performing it. It is better for the beginner to try it on the cadaver.

As to accidents of a technical character, instances of breaking the needle during insertion are reported. If the edge of a broken needle protrudes it is easily removed with a hemostat. If it is broken just beneath the skin and not visible, incision of the skin is required. Some cases necessitate a generous longitudinal incision and removal with a right angled hemostat. In one reported case the needle broke in an attempt to do spinal anesthesia. The patient was then operated on under inhalation anesthesia for removal of the kidney. The needle was not removed and the patient evidently was not told what had happened. Ten months later, after striking his back against a bench, the patient developed severe pain in the lower part of the chest. He went to another hospital where x-ray examination showed a broken spinal needle between the twelfth dorsal and first lumbar vertebrae. At operation a rusty needle, 3.5 cm. long, was found and removed. The patient was discharged in good condition. Undoubtedly there are more such cases unreported.

One of the most frequent complications of lumbar puncture is the development, after three to five hours or later, of a severe headache, accompanied in some cases by nausea and vomiting. Headache occurs more often in patients in whom lumbar puncture was performed in a sitting position. It is longer in duration, sometimes lasting ten or more days. The cause of the headache is the fall of spinal fluid pressure due to reduction in the volume of the spinal fluid which, in turn, there is reason to believe, may

result from a leaking out of the fluid through the needle hole in the meninges. Evidently the dura mater is of different thickness in some regions, and leakage is likely to take place in the region where the dura is very thin; the tension of the spinal fluid might stretch the dura and by opening the hole lead to leakage of the fluid. If the dura is thick it may withstand the tension and prevent opening the hole (Nelson).

The spinal needle must always be sharp; it must be made of steel and rustless; and it should be short beveled, because it minimizes prolonged leakage by making a short flap or trap door in the dura mater. The needle should be thin, not more than 22 to 20 gauge. Unfortunately in many laboratories thick needles, 18 or 17 gauge, are used. On inquiry, I was told that thin needles are not used for fear of breaking. This statement is incorrect; the thick needle when bent breaks sooner than a thin one. The 22 gauge needle can be bent to 180 degrees before it breaks. The needle should be bent before insertion to be sure of its good condition. Another reason for using a thin needle is that it leaves a small hole in the dura mater and minimizes the post-punctural leakage, thereby decreasing the possibility of the development of headache.

Moore points out that spinal puncture should not be performed on patients with brain tumor and acute infection. In the former case the sudden release of intracranial pressure may prove rapidly fatal through herniation of the brain stem into the foramen magnum, with paralysis of respiration. In the case of acute infection without meningitis the alteration in the blood-spinal fluid barrier, caused by the withdrawal of spinal fluid, may permit the transfer of organisms from the blood stream to the cerebrospinal canal which will lead to meningitis.

We have described in the simplest possible manner the details of lumbar puncture. While performing lumbar puncture the physician may find that a sitting position is more convenient than standing or vice versa, or again, that after painting the skin with tincture of iodine it has to be washed off with alcohol, etc. Naturally one can make changes to suit his habits, but one thing must be borne in mind, that such changes will not in any way bring inconvenience to the patient and will not interfere with the fundamental rules of spinal puncture and its safety.

Different clinics report from 15,000 to 25,000

lumbar punctures performed without an accident, which shows that by using precaution and common sense with an elementary knowledge of the technique of spinal puncture one can do it with safety.

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PHRENIC INTERRUPTION IN THE TREATMENT OF PULMONARY TUBERCULOSIS

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Recent advances in chest surgery, particularly as it is applicable to pulmonary tuberculosis, have provided us with sufficient evidence and ample assurance of its efficacy. Consequently, our manner of approach in treating pulmonary tuberculosis has changed from an attitude of watchful waiting, to a more vigorous and active management. We are no longer content to depend solely on the conventional treatment of bedrest, superabundance of nourishing food and fresh air, hoping that the natural defensive forces will accomplish what surgically induced rest applied to the seat of the trouble can achieve in a much shorter time and with greater certainty.

It is the purpose of this paper to point out the wide sphere of usefulness of phrenic operations. The favorable results following phrenic interruption is so impressive, that its usefulness in the various forms of pulmonary tuberculosis is becoming more widely accepted every day. Alexander, back in 1924, advocated the use of

phrenicotomy as an independent measure in early involvement after he demonstrated good results in moderately advanced and far advanced cases. Recently, Bendone and Davidson described the effectiveness of phrenic exeresis in relieving symptoms caused by mediastinal shifting in patients whose lungs remain shrunken and cicatrized following long continued use of compressive type of pneumothorax. While others have shown how phrenic exeresis brings about closure of cavities and mention trophic changes in the lung as the explanation for the favorable results following phrenic operation. Various authorities, however, are at variance regarding its relative merit and there is also a difference of opinion as to what constitutes a suitable case for phrenic interruption.

Since rest is the basis of all treatment of pulmonary tuberculosis, it is plain to see, how the elimination of the piston like, tugging movements of the diaphragm will aid in arresting the tuberculous process in the lung. Granting that selective collapse following pneumothorax causes relaxation of the lung and retraction of the tuberculous tissue, this does not prevent the traumatism imposed upon the lung by the violent motions of the diaphragm in the act of coughing.

The object of phrenic interruption is to paralyze the hemi-diaphragm. This is accompanied by an elevation of the diaphragmatic leaves, the extent of which depends on whether the entire motor and cervical sympathetic nerve supply is severed, in which case an atrophy as well as thinning of the muscle takes place. Unless bound down by adhesions the level of the hemi-diaphragm rises from 2½ cm to even as high as 11 cm. The rise is gradual and it takes from six to twelve months to reach its highest point, when it becomes fixed in the expiratory position.

As the atrophied diaphragm recedes into the thoracic cage, the lung becomes relaxed and this phenomena is taken full advantage of by the tuberculous areas in the lung, for a corresponding retraction of the involved part takes place. Thus, areas of infiltration and even cavities become compressed on account of the propensity of the inelastic, tuberculous tissue to recoil.

Besides functional rest, phrenic interruption also produces a varying degree of venous and lymphatic stasis, as well as anoxemia, which

plays such an important part in promoting fibrosis and encapsulation of tuberculous lesions with diminution of septic absorption from the lung.

Phrenic interruption can be brought about by radical phrenicotomy, or exeresis; by simple phrenicotomy and by crushing the nerve fibers.

Radical phrenicotomy, also known as exeresis and avulsion, means that the cervical sympathetic branches and the accessory phrenic nerves are severed, resulting in permanent paralysis of the hemi-diaphragm. In the average case where neither anomalies, nor adhesions to the pleura prevent twisting the nerve out of its bed, it is usually desirable to remove 12 to 15 cm. of its length. This will assure breaking off all the accessory branches and if carefully done and successful, will bring about an elevation of the hemi-diaphragm, with the desired functional rest. In addition to the afore-mentioned mechanical effects, resulting in closure of soft walled cavities and very frequently reduction in size of larger ones, one can nearly always observe a varied degree of clinical improvement, such as: lessened cough, reduction in amount of sputum, lowering of temperature and negative sputum. These favorable subjective manifestations will very often make themselves felt as early as one month following phrenic paralysis. Many observers have noted circulatory changes in the lung, such as congestion and proliferation of the peri-bronchial as well as peri-vascular tissues, which in their opinion explains the acceleration of reparative process around tuberculous lesions following phrenic-exeresis.

Simple phrenicotomy, or merely dividing the phrenic nerve has been abandoned to a great extent in favor of the more radical exeresis, in cases where a permanent paralysis of the diaphragm is desired. Many failures to secure paralysis of the hemi-diaphragm are said to be due to the presence of accessory branches which join the main trunk deep in the thorax and can carry on the function of the phrenic nerve if they are left undisturbed. It is estimated that 20% to 30% of all individuals are supposed to have such accessory branches. In many cases following simple phrenicotomy, the level of diaphragm does not rise to the extent it will do after exeresis, although its movements have ceased altogether. It has been pointed out however, that

the height of the level of diaphragm bears no relationship to the amount of improvement that can take place in the lung.

Crushing of the phrenic nerve causes a temporary paralysis of the hemi-diaphragm. It produces a state of rest, which lasts from three to six months. This procedure deserves more emphasis as to its use, than it has received up to the present. It is rapidly becoming the operation of choice as the initial step in collapse therapy. Being an entirely revocable procedure, not unlike pneumothorax, it is in the same time a simple as well as a safe operation; while pneumothorax is not without dangers and complications. The temporary loss of diaphragmatic function is particularly advantageous in minimal lesions, especially in patients whose family history indicates little natural resistance to tuberculosis. In such cases, where x-ray reveals a small area of infiltration, one might hesitate subjecting the patient to the hazards of pneumothorax with the attendant need of long continued and frequent refills. A great many of these cases will get along under conservative management alone, and yet the functional rest afforded by a simple and safe procedure, such as the crushing of the phrenic nerve will facilitate healing of tuberculous lesions in the lung. Temporary interruption of the phrenic nerve is also useful in the contralateral lung of bi-lateral involvement, when successful pneumothorax is being maintained on the "bad" side, while the other lung shows spreading of infection, with troublesome coughing therefrom.

In a series of 75 cases on whom phrenic interruption was done by the writer, 45, or 60%, were classified as moderately advanced and 30, or 40%, belonged to the far advanced group. All but five cases showed some improvement of subjective symptoms, within three months following phrenic interruption. Of the total number of cases 54, or 72%, became definitely improved, as evidenced by cavity closure and negative sputum. In the group of 21, or 28%, all were known to have thick walled cavities and supplementary operations, such as thoracoplasty, pneumothorax and permanent phrenic interruption were performed on 15 patients. Of the total number 6, or 8%, died from progression of tuberculous process and not as a direct result of phrenic operations.

Comment. There has been considerable discussion in the recent literature as to the relative value of phrenic operations in comparison to the use of pneumothorax in the treatment of pulmonary tuberculosis. While each procedure has its enthusiastic supporters, one can hardly question the usefulness of pneumothorax in suitable cases. The advent of pneumolysis has increased the availability of pneumothorax as an effective method of closing thick walled cavities, especially if adhesions at the seat of trouble have prevented a previous attempt at collapsing the diseased lung.

The routine use of artificial pneumothorax as the initial step in collapse therapy, so much in vogue until recently, is now subject to revision, in the opinion of many authorities. That pneumothorax treatments are not without attendant dangers, as well as drawbacks, is obviously too well known to require further comment. While the fact, that pleural adhesions frequently follow in the wake of a discontinued pneumothorax therapy, is also worthy of mention. This is of particular importance, when phrenic paralysis is considered as the next step in treatment, because adhesions will materially impair the chances of its success, just as in the case of pneumothorax.

Phrenic interruption, preferably crushing of the nerve, on the other hand, is a safe and simple procedure. The increased use of temporary phrenic paralysis has considerably widened the scope of usefulness of phrenic operations in the treatment of pulmonary tuberculosis. Having the added advantage of permitting, with impunity, a subsequent change from a temporary to a permanent paralysis, or to supplement it with pneumothorax, temporary phrenic paralysis should be seriously considered when contemplating the first step in collapse therapy.

Conclusions: 1. Phrenic interruption has a definite place in the treatment of pulmonary tuberculosis.

2. Phrenic interruption induces paralysis of the hemi-diaphragm, which may be either permanent, such as following simple phrenicotomy and phrenic exeresis, or temporary as after crushing the phrenic nerve.

3. Temporary paralysis of the phrenic nerve brings about functional rest by abolishing dia-

phragmatic movements for a period lasting from 3 to 6 months.

4. Crushing of the phrenic nerve is a safe and simple procedure, and is particularly well suited as the initial step, whenever collapse therapy is indicated.

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FEVER IN CHILDREN

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Nervous inhibition in a child is utterly lacking during the first year of life and it is comparatively weak throughout the entire childhood.

The unstable nature of the nervous mechanism and particularly of the heat regulating center explains why the reactions to acute conditions are so much more exaggerated in a child than in the adult.

Also the immunologic reactions and general systemic resistance in children are not yet fully developed which is largely responsible for their susceptibility to acute infections and also for the production of the intense systemic toxemic reaction as expressed in fever and its concomitant symptoms.

Every practicing physician has had the experience of observing how easily the temperature of a child goes up and down on the slightest provocation. In an infant a temperature as high as 106° or 107° may be brought about by merely applying external heat in too close proximity to its body. What in an adult will amount only to a chill, in a child will bring about convulsions. Just a slight inflammation along the respiratory tract or a mild gastrointestinal upset will often cause a high fever which not infrequently will completely disappear in 24 to 48 hours without application of any therapeutic measures at all or by just giving a cleansing enema.

True enough, physicians in their everyday practice see cases where high fever is practically the only symptom encountered and where no explanation of its cause can be found even after a

thorough examination. Still, it must be readily admitted that in certain instances the physician either fails to make a thorough and careful examination, does not try hard enough to elicit a complete history of the present illness, or, as is frequently the case, is not given the opportunity to work up or to follow up the case to the point where a proper diagnosis can be made.

Speaking of the importance of obtaining a history of the present illness, I recollect a case of a girl eight years of age, who, when I first saw her, had been sick two days; her temperature was 104° and absolutely no other findings whatsoever. Questioning of the mother did not reveal information of any importance, but on persistent questioning of the child, she suddenly recollected that on the day before she became ill, she ate a green pear. A dose of castor oil relieved her.

Considering the fact that we are dealing with a child, uppermost in the attending physician's mind must be the thought that he may be dealing with what may possibly turn out to be an onset of an acute contagious disease, especially if he is able to elicit a history of a recent exposure. Only too often the physician is due to disappointment after telling the parents that it is only a "cold" or the "flu," because he finds only fever on his first visit and three or four days later, the child breaks out with a rash.

An "obscure fever," particularly in little girls, may be often cleared up by examination of the urine and thus finding an acute pyelitis as the actual cause of the fever. In connection with this let me mention the fact that in low grade pyelitis, quite frequently, as a matter of fact in about 40% of the cases, pain is completely absent.

Lately, due to the recent epidemic, we have learned to be on the lookout for acute anterior poliomyelitis whenever we see a child with fever as the outstanding symptom which cannot be explained.

In every case of a child with fever, an otoscopic examination should constitute a routine procedure because infections within the external auditory canal or the middle ear are too often the cause of so-called "obscure fever," and this real cause is often found out only when a purulent discharge appears in the ear canal.

Fever due to a delayed reaction to serum injection, especially after antitetanic serum has

been administered, must be thought of.

At first, fever will appear to be unexplainable in such conditions as:

- Acute Sinusitis
- Acute Cervical, or Submaxillary Adenitis
- Acute Endocarditis
- Acute Rheumatic Fever
- Herpes Zoster
- Tuberculosis, etc.

Malaria, although rare in this part of our country, must be thought of especially during the summer months when people travel to different parts of the country on their vacations. I recollect a case of a girl, 14 years old, who exhibited unexplainable repeated attacks of high fever and chills for several days, but whose blood on repeated examinations proved negative for malaria, still, after repeated attempts with other medicaments proved futile, intensive quinine therapy was successful.

Symptoms—concomitant with fever are:

Cardiac Rate—increased in proportion to height of fever.

Respiration—increased in rate and depth.

Tongue—dry.

Anorexia.

Urine—diminished in quantity, highly colored, contains an increased amount of ammonia; specific gravity is increased, albumin may be present (febrile).

Maybe diarrhea or constipation.

Headache.

Delirium.

Convulsions.

These symptoms, depending on their severity, may denote either a severe infection which subsequently will manifest itself in the form of some contagious disease by the appearance of specific symptoms, or it may turn out to be only a mild infection which soon clears up.

Treatment of the febrile child: First aim of the treatment is to establish the underlying cause of the fever and treat that particular cause.

General measures: Isolate the sick child—so as to protect other children of the family.

Keep the child in bed—until temperature is normal for at least 24 hours.

Sick room must be well ventilated and kept at about 75°; the humidity of the air is maintained by boiling water or by hanging up wet sheets.

Child must not be overdressed and not covered with heavy bedclothes.

Oral hygiene in older children should be maintained by the use of a mouth wash and brushing of teeth.

Diet: Push fluids—water and particularly citrus fruit juices. (The urine must be watched in the meantime as to its amount, specify gravity and color, dark, amber-colored urine indicates insufficiency of fluids; watery, light-colored urine—too much fluids.) If necessary, in a child over 4 years of age, administer fluids per rectum, giving about 4 ounces of 5% glucose in saline solution (keep rectum tight for about 5 min.); subcutaneously into the thighs, intravenously or intraperitoneally, if no other way possible and child is dehydrated.

Feed child little at the time but often, to prevent ketosis and mineral imbalance.

Carbohydrates—easily digestible, in the form of: hard candies, jellies, custards, cereals, zwiback, salty crackers, etc.

Milk is an excellent food for the febrile child and it is preferably given in the form of skimmed milk, because fats are not well digested in the febrile state.

Cooked fruits—applesauce, cooked prunes (mashed).

Elimination: Luke warm enema, repeated, if necessary, until returns are clear, not oftener than every other day.

Suppository—may be used in infants.

Milk of magnesia—if mild action desired.

Castor oil—if drastic action indicated.

Drugs: Aspirin—in proper doses, combined with alkalies (citrates).

Euquinine—slows pulse, quiets nervous system and calms pain.

Bromides, barbiturates or paregoric—as sedatives.

Caffeine, aromatic spirits of ammonia, adrenalin—when stimulants are indicated.

Hydrotherapy is employed when temperature reaches 104° or more, or when child is very restless.

Sponge bath—using alcohol and water (half and half); sponging one part of the body after another while keeping the rest of the body covered to avoid chilling.

Immersion into a lukewarm or tepid bath is quite effective in reducing fever.

Wrapping child in wet tepid sheets or flannel blanket.

If convulsions develop—rapid immersion into a lukewarm tub-bath and an ice bag to the head, or a tepid wet pack may be applied.

In case of cyanosis or dyspnea—oxygen inhalation.

Blood transfusion—is at times a life saving procedure.

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THE TREATMENT OF PNEUMONIAS WITH SULFANILAMIDE

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Sulfanilamide is a dye known as para-amino-benzene-sulfonamide, and is the amid of sulfanilic acid. It is a white powder, slightly soluble in cold water but very soluble in hot water and hot alcohol. This drug was first synthesized by Gelmo¹ in 1908. Gelmo made several compounds from sulfanilic acid, and one of these compounds was the para-amino-benzene-sulfonamide. Recently S. M. Rosenthal, senior pharmacologist at the National Institute of Health, Washington, D. C., developed another compound. This product, called "disulfanilamide," is more effective than sulfanilamide if given by subcutaneous injection. Sulfanilamide was discovered several years ago in the dye industry in England, and was discarded as a waste product. In 1920 a concern holding the original patent used sulfanilamide in the manufacturing of colors for woolen fabrics. Recently, Dr. Horlein, a German chemist, who was the originator of phenobarbital, suggested to Dr. Domag, also a German chemist in the Lever-Kusen Laboratories of Elberfeld, Germany, to try the antibacterial activity of sulfanilamide. Domag,² while experimenting with these various compounds, discovered that sulfanilamide has antibacterial activity in vitro—that a weak solution of sulfanilamide will kill bacterial in vitro. In 1935 Trefouel, Nitti and Bovet³ demonstrated the bactericidal property of sulfanilamide against streptococci in experimental animals. Levaditi and Vaisman⁴ also reported the bactericidal property of sulfanilamide. Since these reports several observers, experimenting in both human beings and animals, demonstrated the bactericidal activity of sulfanilamide in vivo and vitro.

Rosenthal, of the National Institute of Health, reported that a dilution of 1-10,000 will cause death to pneumococci in 24 hours. Rosenthal injected into the mice lungs cultures of various strains of pneumococci, and then treated

the mice by injecting sulfanilamide in oil and got cures from 86% to 100%. Rosenthal further states, that rats inoculated with pneumococci by injecting the pneumococci cultures into their lungs, and then treated with sulfanilamide, all survived. In rabbits infected with different strains of pneumococci, 75% survived after treatment with sulfanilamide.

There are several theories as to the action of this drug in vivo. Levaditi and Vaisman state that sulfanilamide interferes with capsule formation of bacteria, which renders the bacteria susceptible to phagocytosis. Phagocytes attack bacteria more readily when bacteria are present without capsule.

Colebrook and associates reported that the blood and serum of patients treated with sulfanilamide shows bactericidal and bacteriostatic qualities. They state: "If you saturate a patient's blood with sulfanilamide his blood will destroy or inhibit the growth of bacteria."

Bliss and Long, of Baltimore, have demonstrated that sulfanilamide acts on the micro-organism directly. He states that sulfanilamide does not increase phagocytosis.

Gross and his associates do not believe that sulfanilamide increases phagocytic activity of the polymorphonuclear leucocytes.

Colebrook and Kenny reported lately that the serum of the patient receiving sulfanilamide becomes increasingly bacteriostatic. They claim that sulfanilamide is changed in the body into an active substance which attracts the bacteria. They also claim that the serum from the patient will inhibit the growth of bacteria.

My experience in the treatment of pneumonias with sulfanilamide is limited to Type I, II and III pneumococci. According to *Bacteriologist*, there are 32 types of pneumococci. The most frequently encountered pneumococci types are I, II, III, IV, V, VII and VIII in adults and I, XIV, VI, V, IV, XIX and III in children, in the given order of frequency. Types I, II, V and VII occur more often in males, and types III and VIII in females.

Some types of pneumococci are less invasive than others. The size of pneumococcus III may account for the infrequency of bacteremia due to this type. The mortality for pneumococci is usually about 75%. (The death rate generally increases with each decade of life, the most

significant increases occurring after age 30 and age 50.

The diagnosis is made in the laboratories by means of the Neufeld capsule swelling reaction, by mouse inoculation and by the bile solubility test.

Of these methods, the Neufeld reaction is the most widely used. The test is based on the circumstances that when immune serum is added to material containing pneumococci, the capsule of the pneumococcus will swell only if the immune serum corresponds to the specific type of pneumococcus in the material. The capsule swelling is visible under the microscope.

Several cases of pneumonia successfully treated with sulfanilamide were recently reported in several medical journals. Millet reported in the N. Y. State Medical Journal, Oct., 1937, that he treated eleven cases of pneumonia mostly type III, which is the most fatal type of pneumonias, with sulfanilamide with one death. His treatment consist of 15 gms. of sulfanilamide the first twenty-four hours, continued for about three and one-half days until the patient received a total of 25 gms. Thirty-one hours after the institution of sulfanilamide therapy the temperature had dropped from 104.2 to 99.4 F. For the next two days the temperature averaged 100 F. and then dropped to normal.

Hadley, Mellon and associates from the Western Pennsylvania Hospital reported the successful treatment of nine cases of pneumonia, most of them type III, with sulfanilamide with only two deaths, one was a man aged 60 and the other a man of 67. They had 19 cases of pneumonia, of which 9 were treated with sulfanilamide and the others received serum and general treatment. The death rate of those treated with sulfanilamide was 22% while those treated with serum and general treatment was 74%. Later they reported four more cases of pneumonia; two of them received sulfanilamide within 48 hours with complete recovery, the other two died twelve hours after the admission to the hospital.

I had the opportunity to treat six cases of lobar pneumonias with sulfanilamide with no deaths, the results of which I report herewith.

Case 1. A man aged 32 years, a clerk, was taken sick March 7, 1937. He stayed in bed all day that day. He went to work the next day feeling somewhat better. By night he developed severe chills and next day he had severe pain on the right side of chest

and cough. I saw him in the morning when he had temperature 102.6 F., profuse perspiration and bloody sputum. Physical examination revealed consolidation right lower lobe. Laboratory examination revealed type II pneumococci. He was placed immediately under sulfanilamide treatment, 20 grs. every four hours for four doses, and 15 grs. of sodium bicarbonate t.i.d. The same doses were repeated the next day and in 48 hours the temperature dropped from 104.6 F. to 100 F. The dose of sulfanilamide was gradually reduced to 10 grs. four times per day. The next two days the temperature averaged 99.6 F. and then dropped to 97.4 F. and stayed normal thereafter. The lung cleared up by the 8th day. Patient made a complete recovery.

Case 2. A woman aged 42 years, housewife, taken sick March 20, 1937, and on March 22 she had severe chill at 4:00 p. m. I saw the patient at 8:00 p. m. when she had temperature, 103.5 F., and complained of pain on the right side and cough. Physical examination and laboratory examination revealed lobar pneumonia type III, right lower lobe. She was placed on sulfanilamide 15 grs., every four hours daily for three days, also 15 grs. of sodium bicarbonate t.i.d. After two days' treatment with sulfanilamide the temperature dropped to 100 F., and all toxic symptoms disappeared. The sulfanilamide reduced to 10 grs., four times per day, and later to 5 grs. every three hours daily. The patient made a complete recovery without any complications.

Case 3. A man aged 48 years, taken sick September 26, 1937. Two days later had severe chill and stabbing pain on the back of chest, left side; he had temperature 104.2 F., cough and bloody sputum. Laboratory examination revealed type III, pneumococci; the left lower lobe was involved. He was placed on 10 grs. sulfanilamide every four hours and 15 grs. sodium bicarbonate t.i.d. for three days. After three days of treatment the dose of sulfanilamide was reduced to 5 grs. every three hours for another three days. At the end of seven days of treatment the temperature dropped to average 99 F.

This man developed pleurisy with effusion and he received, in addition to sulfanilamide, 100,000 units of Felton's serum. The sulfanilamide was discontinued by the tenth day. The patient made a complete recovery.

Case 4. A man aged 26 years, a machinist, was taken sick Oct. 10, 1937. Two days later he complained of sharp pain on right side of chest, chill and cough with bloody expectoration; his temperature that afternoon was 103.6 F. Physical examination revealed lobar pneumonia right middle lobe. Laboratory examination of sputum revealed type I pneumococci. He was placed on sulfanilamide 10 grs. every four hours and 15 grs. of sodium bicarbonate t.i.d. for two days and this dose was reduced gradually so that by the 6th day he was receiving 5 grs. sulfanilamide four times per day. The temperature dropped by the 5th day to average 99 F. The patient made a complete recovery.

Case 5. A woman aged 38 years, a clerk, on No-

vember 2, 1937, became very ill, complaining of general malaise. She stayed home that day and took cathartics. The next day she felt better and went to work, however, by noon she felt worse and returned home. In the afternoon she had chills and at night complained of pain on the right side of chest and cough. When I saw her that night she had temperature 103.6 F. and rapid respiration. Examination revealed lobar pneumonia right middle lobe. Laboratory examination disclosed pneumococci type VIII. She was placed on sulfanilamide immediately 10 grs. every 3 hours the first 24 hours with 15 grs. of sodium bicarbonate t.i.d. The next 24 hours was given 10 grs. of sulfanilamide every four hours for four doses with sodium bicarbonate. Two days after the beginning of treatment the temperature dropped to average 100 F. and by the 5th day to 99 F. The sulfanilamide was discontinued on the seventh day. The patient made a complete recovery without any complications.

Case 6. A man aged 28 years, a truck driver, became sick November 10, 1937. He went to work that day but returned home after three hours. Next day he developed pain on the right side and had a severe chill and some cough. I saw him at 9:00 p. m., at which time he had temperature 104.2 F., and bloody sputum. A diagnosis of lobar pneumonia right lower lung was made, laboratory examination revealed type II pneumococci. Patient received 20 grs. of sulfanilamide every 4 hours for four doses and 15 grs. sodium bicarbonate t.i.d.; same was repeated next day when the temperature dropped to 101 F., and by the 5th day the temperature averaged 99 F., and on the 8th day the temperature returned to normal. The patient made a complete recovery without complication.

The dose of sulfanilamide is calculated on the basis of 15 grs. for each 20 lbs. of body weight up to 100 lbs. Apparently 75 grs. represents the maximum daily dose that has been used with safety in adults (this can be divided into 4 doses given 6 hours apart). I have given as much as 100 grains in 24 hours without any ill effects.

Certain precautions must be observed in the administration of sulfanilamide. To prevent acidosis, which sometimes develops during the administration of sulfanilamide, 15 grs. of sodium bicarbonate t.i.d. is given in conjunction with sulfanilamide. Do not give patient coal tar products during the administration of sulfanilamide. Avoid cathartics containing sulphates or sulphides. Sulfanilamide is contraindicated in heart diseases, degeneration or cirrhosis of the liver, diseases of the kidneys and anemias. In prolonged administration of sulfanilamide it is advisable to examine the blood microscopically for evidence of blood cell destruction as well as lowering of the white blood cell count, also make spectroscopic examination

of the blood to rule out both sulfhemoglobinemia and methemoglobinemia.

Toxicity of sulfanilamide. Several authors reported toxic symptoms from prolonged administration of sulfanilamide. The following are some of the symptoms resulting from toxic doses of sulfanilamide:

Methemoglobinemia, sulfhemoglobinemia, acidosis, cyanosis, fever and dermatitis. The cyanosis is due to the changes in hemoglobin to methemoglobin. The rash which develops sometimes resembles the rash of measles and usually appears on the 8th or 9th days of sulfanilamide treatment and disappears within thirty-six hours after withdrawal of sulfanilamide; therefore, large amounts of fluid must be administered in conjunction with sulfanilamide treatment.

Kohn⁵ reported that a patient developed acute hemolytic anemia occurring during treatment with sulfanilamide in a case of bilateral otitis media. After stopping the drug and giving transfusion in ten days the patient recovered completely.

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AGRANULOCYTOSIS FOLLOWING THE USE OF SULFANILAMIDE:

Report of a Case

PHILIP R. McGUIRE, M. D., and
JAMES P. McGUIRE, M. D.

CHICAGO

Within the past few months there have been numerous papers written about the toxic manifestations of sulfanilamide on the human body. Some of the more serious effects have to do with the hematopoietic system, and several cases of acute hemolytic anemia have been reported.^{1, 2} Fatal cases of granulocytopenia have been reported by Young³ and Borst.⁴ As far as we know, there has been no case reported in which the patient survived and was found subsequently to be "sensitive" to the drug when it was administered again.

That granulocytopenia does occur after the

administration of certain drugs has been shown in numerous instances. The condition has been known to occur after amidopyrine,⁵ allonal,⁶ novaldin,^{7, 8} and dinitrophenol,⁵ to mention a few of the more commonly used medicaments. The use of sulfanilamide is rapidly becoming common and widespread, and there can be no doubt as to its great value in the treatment of certain types of infections. The results obtained in streptococcus infections have been really startling and as more of these favorable reports appear, certainly more and more physicians will be tempted to use the drug. Perhaps the number of unfavorable reports is quite small in proportion to the amount of the drug being used at the present time, but the possibility of the occurrence of toxic manifestations or of idiosyncrasy to the drug should be borne in mind.

Because of the severity and high mortality rate of agranulocytosis, we feel that this case report may be of interest.

M. M., married white female, 35 years of age, was first seen by us on December 31, 1936. Her complaint at that time was a multiple rheumatoid arthritis. Her past history was negative except for a cesarean section ten years previously. She stated that her joint pains began in June, 1935. Treatment for this condition had consisted of a series of hyperpyrexia treatments, combined streptococcus vaccine and sodium iodide intravenously. The latter two had been given at weekly intervals between June, 1935, and December, 1936. She also took 15 grains (0.9 grams) of natural sodium salicylate by mouth three times daily.

On January 18, 1937, this patient was advised to take sulfanilamide (prontylin), one 5 grain (0.3 gram) tablet three times daily, and two weeks later reported that she felt much improved and the joints were less swollen. She was advised to continue the sulfanilamide therapy. During this time no other medication was given.

On February 18, 1937, the patient was seen at home, complaining of feeling weak and having a high fever. Her temperature was 104° F., pulse 130 and respirations 25. Physical examination was entirely negative at this time, except for a small paronychia on the right middle finger from which a small amount of seropurulent material could be expressed. The sulfanilamide was continued. On the following day a small patch of grayish-white membrane was visible on the posterior pharyngeal wall, extending down from the nasopharynx; the right submaxillary and cervical glands were enlarged and tender.

Feeling that this was a streptococcus sore throat (the diphtheria culture was negative, sulfanilamide was continued and supplemented by prontosil, 5 c.c. every six hours intramuscularly. The lesion on the finger was now free of pus, but was not healing. When seen the following day the patient was in an extremely

critical condition. The glands were larger and more tender with no tendency to soften, and the right suboccipital gland and right axillary glands were also involved. The patient complained of dyspnea and palpitation, a soft systolic murmur was heard over the mitral area, and the heart was fibrillating wildly. Moist râles were found in both lung bases.

On admission to the hospital, the white blood count was found to be 450 per cubic millimeter; no granulocytes were found in two smears, only 3 lymphocytes being present. The grayish-white area in the pharynx was now larger and involved the posterior pillar on

Inasmuch as this patient denied taking any drugs which are known to cause granulocytopenia in some individuals, we felt that the sulfanilamide may have been the exciting factor in this case. Accordingly, two months after recovery from the leukopenia described, this patient was again given sulfanilamide 7.5 grains once daily. White blood cell counts and blood smears were taken daily at the same hour. A rather rapid decline in the total count, as well as in the number of granulocytes, occurred, and after the count decreased from 13,050 per cubic millimeter to 9,250 per cubic millimeter, we did not feel justified in continuing

CHART 1. RESPONSE OF HEMATOPIETIC SYSTEM TO TREATMENT AFTER STOPPING SULFANILAMIDE

Date	White Cell Count	Granulocytes	Lymphocytes	Number of Cells Counted	Red Blood Cells	Hemoglobin	Remarks
2/21/37	450	0	3	3			
2/22/37	750	0	9	9	3,830,000	58%	Many platelets seen
2/23/37	850	0	8	8	3,760,000	55%	
2/24/37	3,200	38	62	100			Very many platelets seen
2/25/37	10,200	76	24	100	4,290,000	65%	Very many platelets seen
2/26/37	25,150	77	23	100			
2/27/37	19,950	87	13	100			
2/28/37	22,950	87	13	100	3,590,000	50%	Platelet count 212,500
3/ 1/37	20,100	88	12	100	4,120,000	59%	

CHART 2. BLOOD COUNTS AFTER RESUMING SULFANILAMIDE

Date	White Blood Cells	Granulocytes	Lymphocytes	Remarks
5/3/37	13,050	82	78	Sulfanilamide started
5/4/37	13,300	85	20	
5/5/37	12,986	54	40	
5/6/37	12,180	48	52	
5/7/37	9,250	35	65	Sulfanilamide stopped
5/8/37	11,450	62	39	

NOTE:—Since this article was submitted, two cases of fatal agranulocytosis from sulfanilamide were reported in J. A. M. A., 110: 5, 1938. One by W. F. Schwartz, C. F. Garvin, and Simon Koletsky, and the other by S. Berg, and M. Holtzman.

the right side, was foul smelling and ulcerated. A similar patch had appeared on the left anterior pillar and the patient had much difficulty in swallowing. The left submaxillary and anterior cervical glands were also enlarged and tender.

Sulfanilamide was discontinued and an effort was made to stimulate white cell formation. Pentonucleotide was given in 10 c.c. doses intramuscularly every six hours, and whole blood was also administered intramuscularly in 40 c.c. doses twice daily. Two stimulating doses of x-ray were directed over the long bones, one on February 23 and one on February 24. Chart 1 illustrates the response of the hematopoietic system.

On the fifth day after admission, when the white blood cells had reached 25,100 per cubic millimeter, fluctuation occurred in the cervical glands and these were incised under ethylene anesthesia. As the white count mounted, pus again appeared in the paronychia, and this soon healed. Recovery then occurred rapidly, and the patient was discharged on the fourteenth day after admission. All arthritic symptoms had vanished, only to recur six weeks later.

the drug further. This decline is shown in Chart 2.

Comments. A case of agranulocytic angina is reported following the use of sulfanilamide. The dosage of the drug in this case was comparatively small, 5 grains (0.3 grams) three times daily over a period of thirty days. To prove that the drug was the cause of the disease in this case, it would be necessary to administer the drug until the condition was reproduced. This would not be justifiable. We feel that the rapid decline in the white blood count and in the granulocytes when the drug was resumed in small doses is strong evidence that it played an important part, if not the exciting cause, in the production of the leukopenia.

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THE BIRTHRIGHT OF A CHILD

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"The Birthday of a King."

"The Birthday of a New Year."

We have just passed through an annual event that has been celebrated for generations and each succeeding year, it seems, with less reverence or thought of the meaning: the "birthday of a king," of "Christ," his immortality, from the teaching left for us to follow.

I think of those who still follow his teachings and of the less fortunate who struggle in the dark for a solution of their restless seeking for something they cannot find and deny its existence. I think of the New Year's eve celebration, of the perhaps 70% of the population who spent the time in taverns, drinking and smoking, given over to hilarity and frivolity, with no thought of the future. I think of the innocent babes that will be cursed, either by destruction of life, abandonment or a life of shame or disease as the aftermath of the holiday season.

I read in the newspapers the criticism of the government because of certain conditions existing in the nation today, and then I read the wonderful message of our worthy president to the Congress now in session. I ponder over the result and wonder how anything can be accomplished with so many opposing solutions to a grave problem. And then my thoughts travel along another problem that is as vital as any discussed, but on which no legislation has yet been reached and this problem is the birthright of a child, which is a sound mind and body, with a comfortable home and the right environment.

For generations "the sins of the father's, or shall we say 'parents,' have been visited upon the children," and I think this should be prevented by national laws making it impossible for sex degenerates, mental defectives, the insane, epileptics, and criminals to procreate. This is the one vital factor permeating all vital functions in life today. "Innocent Babes," who have the moral and legal right to be well born, who are not responsible for being brought into the world should be protected by law and our government from being cursed with criminality, sex degeneracy, insanity or feeble-mindedness or

having to be confined to an institution because of any of these conditions. The citizenry should be taught that no male or female, in whatever station of life, if irresponsible, have a moral or legal right to create a child to be a public charge. The child problem is discussed but the parent problem overlooked. Let us reverse the order and by controlling the parent problem we will have no child problem.

We spend millions each year for child welfare, in providing medical care, food, clothing and shelter, but not one national thought or effort is put forth to prevent the birth of these children by the irresponsible parents. The question is as vital and should be as national as any farm, labor or industry program.

The parasites in every community who for generations have produced no income, but consumed at public expense and were responsible for five or six subnormal children to increase the burden of the taxpayer, should be sought in each community and a process of sterilization begun to prevent further feeble-mindedness, morons, and sex criminals. We speak of crop control; birth control by our government laws is as essential. Soil erosion, yes; but what of human erosion, and degeneration?

Look about your community and you will see families like one I have in mind, the father and mother both drunkards, six children, with not sufficient income, and what income there is spent for drink and cigarettes and the children are taught to be thieves, to go from door to door and steal milk for the family breakfast and the oldest daughter sold into prostitution to help the meal ticket.

Another family where the mother deserted six small children and the appeal by the father to the mother through the press for her return so the children would not have a Christmas present of entering the orphan's home.

I think the social welfare workers have been working along the wrong lines. I think "Child Welfare and Public Welfare" have also worked along the wrong lines, and while alleviation of suffering should continue, a national program is also necessary to prevent a recurrence and to give a child its "National Birthright," which is a sound mind and body, a comfortable home and the right environment, to prevent the fear complex, the inferiority complex and the various other complexes.

Look about and tell me whether the rating is too high, that 70% of the young men and women of today are unfit for parentage, because of disease, alcohol, tobacco abuse, or drug addiction.

Let the year "1938" be the birth of a new nation, giving a child the birthright of a "*sound mind and body*," a comfortable home and the right environment. Make child *abandonment* and *destruction*, a "criminal offense," and when this is done we can celebrate the real meaning of "The Birthday of a King."

PRESENT DAY PROBLEMS IN MENTALLY DEFICIENT CHILDREN

J. C. KRAFFT, M. D.

CHICAGO

The mentally handicapped offers the biggest problem for society today as it effects the entire community, for the mentally deficient case of today is the potential criminal of tomorrow.

You can pick up any print, and read there the detailed account of some crime, and you wonder why the laws are so lax and the police so inefficient. But have you ever stopped to think who commits these crimes, and what you have done as a physician to stop them? The general public is quick to criticize but also quick to remedy matters if shown why.

Excellent work is being done so far as the physically handicapped child is concerned but little for the more important, namely, those who are mentally handicapped.

Points to be considered are as follows:

1. We must join hands with all groups; the medical profession must throw aside its indifferent attitude and must be the aggressors. A few years ago some officers of the State Society met with thirteen of the most important lay organizations, and everyone was anxious to work with the medical profession providing we gave them a concrete program. To do so we must have a change in some of the usual policies we have in our meetings. Our greatest trouble is that our meetings are too inbred. At each meeting we should have a lay speaker as well as a scientific speaker. If we begin in this way we can work in harmony.

2. Education. We must teach the medical

profession as well as the lay people the results of these mental deficient.

In the last eighteen years crime has increased over 20%—one-third of our taxes go for this purpose. A few years ago the average age of a convict was 23 years, now it is less than 18 years. One in every sixteen homes is affected by crime. The United States has the highest homicidal rate of any country. Eighty-five per cent of these criminals are mentally deficient. Out of 16,000 families examined by the United Charities 60% had one or more mentally defective children. At Geneva the average age of girls is fifteen years but the average school age is five years. The child appeal is the strongest appeal to the lay people.

3. When we have formed our groups, and have educated them we must have compulsory annual physical examinations. But we must believe in physical examinations; we must be sold on what we preach, we must be sincere. Seventy-two per cent of all school children examined in New York City had one or more defects. Physical defects uncorrected lead to mental deficiency, moral breakdown and criminal tendencies. When I speak of physical examinations I mean from birth on. The time to correct many conditions is during the first year.

Epilepsy: Dr. Bowers states that over 90% of all the crimes of impulse are committed by epileptics. There is no law to keep them in an institution in Illinois.

4. After we have had our group gatherings, education and physical examinations then we should have legislation. We will do nothing by punishing crime, only by prevention of crime. The legislature will not dare to disobey the wishes of the lay and professional people.

Not all of these subnormals are Americans. At St. Charles there are only 77 boys who are really Americans.

Did you know that there has never been a boy scout in the Criminal Court?

There is a wonderful campaign on against syphilis, but I maintain that this is just as important as a campaign against syphilis. A few years ago at the Bridewell there were six cases of syphilis; seven of gonorrhea; and twenty-four subnormal cases, and still we spend thousands of dollars to give treatment for venereal disease, and yet spend very little for the unfortunate vic-

tims of circumstances over which they have no control.

Chicago is the first city to have a juvenile court, which is under the guidance of Judge Borrelli who understands boys. Our "Behavior Clinic" under the guidance of Dr. Hoffman, is making great strides and is doing much to help this cause.

When you go home think what you might do for your fellow man, join in with some of these groups for the mentally deficient; it will be a blessing for the child, an economy for the state and an honor to our profession.

3215 West North Avenue.

DISCUSSION

Dr. R. B. Malcolm: I really did not realize the condition of affairs.

Dr. F. Bussey: Is there any school now for the instruction of mentally deficient children, corresponding to the schools for physically defective children?

Dr. Anders Weigen: Your paper was exceedingly interesting. I certainly was entirely unfamiliar with the picture which you painted, and yet as you pictured it it is reasonable to see that it is true. The most important point is the matter of education; arouse the people as you say through the women. The plan of arousing public opinion through the women was tried a few years ago, and accomplished a little.

As to the venereal disease campaign, while I think it is a good plan, I am dubious as to just what it will accomplish. I had the opportunity this summer to spend some time in Scandinavia. They have two problems there—tuberculosis and cancer. There is very little venereal disease or congenital lues, especially in Sweden.

We have a very low infant mortality rate, yet if we are getting this other problem I am wondering if it is not going to be a major problem to take care of these low mental cases? About three weeks ago I had three subnormal children to make arrangements for. Referred them to the clinic. Two were of the type that nothing could be done for. In one case the child is absolutely subnormal, and has a sister who is way above the average mentally.

I enjoyed your paper immensely and would be interested to hear what you do in the future.

Dr. H. E. Turner: We have the problem of sending mentally deficient children in the clinic to a proper school. The Board of Education refuses to accept mentally deficient children. Delinquent young girls are given special instruction. There is a special school downtown for pregnant girls, where pregnancy has occurred while they are in grammar school. They are taught by special teachers; come to the point of delivery and are sent to the County Hospital or a Catholic Hospital. Another problem is a great deal of talk relative to Dr. Johnson's new segregation of education. There has been much criticism relative to this. Most

schools have subnormal classes for subnormal students and classes for the normal child.

Dr. Krafft: Regarding the question as to where to send the mentally deficient child: The only state school is at Lincoln. There is also one at Washington Boulevard and Austin Avenue run by Catholic Sisters for girls only. It is a wonderful institution. There are a few private schools but the prices of these are almost prohibitive.

Regarding education: It is a known fact that punishment is no solution. One case appeared before Judge Borrelli, seventeen years of age, no parents, and had not attended school for years. That is the answer to many criminal careers—truancy—one of the first factors in criminal tendencies. This is true in America only. In foreign countries there is no truancy. The reason for this is that in foreign countries a proper calling is found for each child, something that they are interested in, and they never play truant.

Syphilis: This is a wonderful drive, but this is just as important, and from a criminal point of view more so. What we should do is to take a Wassermann at each birth before tying cord.

Speaking of two children in one family, one bright, the other dull. Lombroso says "Genius is epileptic in nature." Many great men are said to have been epileptics.

Do I want your children in institutions? Yes and no! It is the children who become a detriment to society that society must protect the individual from.

Physical and mental defectives: Physical defects will cause mental deficiency eventually.

Delinquent girls: Is it any wonder that girls are becoming delinquent? Open talk in a mixed audience is not good. Clothes are another detriment.

Do not walk out and forget about this for it is your duty to do something about it.

THE USE OF MANDELIC ACID IN THE TREATMENT OF GENITOURINARY INFECTIONS

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The incidence of a genitourinary infection affecting the urethra, bladder and kidney presents a varied bacterial flora. The predominate bacteria found in the structures involved in a clinical research study were: bacillus coli, bacillus alkaligenes, bacillus proteus and staphylococci. Of the cases treated in this series the majority were women. Most of the infections were of the upper urinary tract and presented complicating lesions. The majority of these patients had urinary infections which had been present for months to years complicating the diagnostic

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problem. The studies were instigated to determine the clinical value of mandelic acid which represented one of the newer phases of urological therapy.

In considering infections of the urinary tract it is important to know the type of organism that we were dealing with. Under aseptic precautions the external genitalia was irrigated with binodide of mercury, 1 to 8000, and a sterile glass catheter employed to obtain the urinary specimens. They were cultured on blood agar, Endo's medium, gelatin, and Russel's medium. All urines were centrifuged and a Gram stain made of the urine sediment. Cystoscopic studies were made and any pathological data recorded in the case reports to follow. Catherized specimens of urine were obtained from both kidneys and urine cultured for organisms, and Gram stain made.

Cystitis. The bacilli coli communis was the organism involved in most of our cases of cystitis. The chronicity of the cases, the prevalence of complications and the fact that the infections had resisted previous treatment by other therapeutic measures made this series particularly resistant to cure. In using the term "Cystitis" the apology is made that it rather loosely covers all bacterial invasions of the bladder. It has been our observation that the disease, which is found among about twenty per cent. of women in the child bearing age follows a lowered resistance. It is also observed in newly married women due to trauma or to the activation of a latent infection. A direct extension of the infection by way of the urinary tract should not be over-emphasized in view of the fact that the mode of entrance of infection may be auto-inoculation by organisms from the intestinal canal, through the intestinal wall, through the skin in the region of the external genitals or by way of the blood stream or lymphatics.

The characteristic symptom of the urinary tract infection, that of pain, dull to acute over the supra-pubic region and referred to the lower back accompanied with chills, fever and frequent painful micturition appear in fifty per cent. of the cases. The patient may complain of constipation, headaches, vomiting, incontinence of urine, hematuria and loss of weight. Cystitis per se may exist as an entity for a few days, but if persistent, infection elsewhere in the genito-urinary tract is probable. In well established

cases it is difficult to separate pyelitis, pyelonephritis and cystitis into definite clinical entities as they often occur simultaneously.

The painful symptoms of cystitis were relieved by a hot sitz bath given once or twice daily. The pain and muscular spasm occurring during micturition was relieved by the patients emptying the bladder in a hot sitz bath. In some cases relief was obtained by the application of heat over the bladder, in others, hot douches or hot enemas without drugs. Pain and tenesmus were often so severe as to cause retention and relief was obtained in various ways, such as the use of a suppository of belladonna and opium or tincture of hyoscyamus given orally. These patients were given mandelic acid regularly over a period of one to two weeks duration. In addition we employed local treatment consisting of irrigating the bladder with hot boric acid irrigations, as hot as the patient could comfortably bear, repeated several times a week.

Trigonitis was treated by the direct application of silver nitrate five to ten per cent. on the swab through a Kelly female cystoscope. In a majority of cases a decided improvement took place, the pains disappearing; frequency and urgency stopped.

Pyelitis. As is well known pyelitis is markedly resistant to all forms of treatment. Many of our cases were in the chronic stage, some of them of years duration, and practically all had been treated by previous medical means without much effect on the disease process presented. In these cases inflammation of the kidney pelvis predominated and the bacillus coli and staphylococci were usually the offending organism. All grades of kidney infection represented different degrees of the same pathological process. Pyelitis or inflammation of the kidney pelvis due to bacterial infection constituted the type of cases which are covered in our report. Pyelitis is usually associated with nephritis or inflammation of the kidney. Kidney infection which is an extension of a still existing bladder inflammation has been classified as a pyelocystitis. Both in the combination infection, pyelocystitis and in pyelitis we were able to secure disappearance of the symptoms and a negative bacterial report in the majority of cases examined with marked clinical improvement. Some of the cases were chronic and ambulatory. Cystoscopic studies were made and drainage instituted by means of the ureteral

catheter. The urine was cultured and stained by means of the Gram stain for the identification of organisms.

Precautions and Contraindications. The urine should be examined at frequent intervals. Albumin and casts should be watched for. In elderly patients renal function tests should be determined before the administration. If nausea and diarrhea persist the drug may be interdicted for a few days and then resumed. Gross hematuria was observed in one case.

Therapeutics. In the cases treated we maintained the urine in a bland and non-irritating state with attention first to the diet. However, it is sometimes difficult to effect these conditions by means of ketogenic diet particularly in the type of dispensary cases. Viz., keeping the protein intake low and using milk as the basic food augmented by the use of fats and carbohydrates which are especially valuable in inhibiting growth of the colon bacillus in the intestinal tract. It has been established by Cook and Buchtel of the Mayo Clinic that acidification of the urinary tract will destroy the commoner bacilli, the ketogenic diet proving some value in bringing this about. In order to render the urine sterile, the Ph of the urine must be less than 5.5. The amount of fluid injected in twenty-four hours must be limited to 1200 c.c. or less. No alkalizing drugs such as milk of magnesia, sodium bicarbonate can be taken.

The mandelic acid preparation used was that prepared according to the formula of Fantus and Sisson, (A.Ph.A. December, 1936), in the form of syrup of ammonium mandelate compound. Each average dose of 15 cc. (one tablespoon) represents 3.0 gm. of mandelic acid and 0.75 gm. of ammonium chloride. It was given every four hours with cold water. The patients were instructed by means of nitrazine paper and colored charts to control the urine to the level of 5.5. When these precautions are observed the urine became bactericidal in the course of six or eight days, and the bacteria elimination usually occurred within ten or fourteen days. The drug should be given cautiously to patients whose renal function is already reduced and to aged patients.

A brief citation of a few case histories will convey the favorable impression we have received from its use.

Case No. 79481. Female, aged 45 years. Duration of symptoms three years. Chief complaint: Frequency every half hour, pain and burning on urination. Nyc-

turia—three times. Urine showed 120 W.B.C. per H.P.F. acid in reaction. Cystoscopy showed severe cystitis with purulent urine. Specimens from both right and left kidneys show colon bacillus. Trigonitis with marked inflammation of both ureteral orifices. All forms of the urinary antiseptics had failed to clear the urine. Mandelic acid was administered and in eight days the urine was grossly and culturally negative.

Case No. 1523. Female, aged 41 years. X-ray showed huge bilateral renal calculi. Cystoscopy revealed marked cystitis. Bladder otherwise negative. Mucopus seemed coming from right ureteral orifice. Appearance time of dye in left kidney, seven minutes. Left kidney showed good concentration. Total P.S.P. —15%. Function markedly delayed. Pyelogram revealed renal calculi and calcification within the left kidney. Urine, neutral, albumin-plus, clumps of white blood cells. Left kidney showed gram negative bacilli and gram positive cocci. Following the right nephrolithotomy patient was placed on mandelic acid therapy. Urine both clear and culturally negative at end of six days. Later patient had a left nephrectomy for multiple renal calculi with uneventful convalescence.

Case No. 7988. Mrs. C. H. came for treatment of chronic cystitis and trigonitis. Marked frequency accompanied by hematuria. Cystoscopy under spinal anesthesia showed marked cystitis and submucous fibrosis, cultures from the right kidney, proteus and coli bacilli. The bladder lesions were fulgurated and patient placed on mandelic acid therapy. Urine showed albumin three plus, fifty white blood cells per H.P.F. Bacteriological examination: bacillus proteus and bacilli coli. Under mandelic acid therapy urine was clear and patient greatly improved, but proteus infection persisted.

Female, aged 30. Complained of marked frequency and incontinence for a period of five years. Cystoscopic studies showed unilateral renal and ureteral duplication. Urine culture yielded gram negative bacilli on left side, and right side bacillus alkaligenes. Under mandelic acid therapy urine was clear both microscopically and culturally. The frequency still persisted however, due to the supernumerary ureter.

Conclusions. The cases shown in the tabulation, some of which are still under observation were treated with mandelic acid with uniformly good results. The average number of days of treatment required to produce negative urines were approximately eight.

The case showing the proteus organism, although the urine was not rendered sterile was greatly improved. The case of cocci infection, although improved were not rendered sterile. All cases of coli infection treated, resulted in sterile cultures. All cases improved symptomatically. Five cases of post-operative transurethral resections were treated; although the urine was not made clear, definite improvement followed the use of mandelic acid.

It is important to emphasize that all patients were subjected to careful urological study and the original factors in producing the pyuria was recognized and treated in the realization that the pyuria was only one manifestation of the disease. Mandelic acid therapy should not be instituted until an accurate diagnosis is made.

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 I wish to express my appreciation to Mr. O. U. Sisson who supplied the mandelic acid for

Case No.	Age	Sex	Organisms Present	Predominant Symptoms Nocturia	Diagnosis	Duration When Admitted	Time Mandelic Used	Ph. of Urine Culture	Comments and Results
1	46	F.	B. Coli	Nocturia Dysuria	Trigonitis Cystitis	6 years	14 days	5.2 Sterile	Discharged as cured Nephrotomy for stone 1932
2	55	F.	Proteus gram negative diplococci	Nocturia chills fever	Pyelitis, Bilateral	2 years	12 days	5.0 Sterile	All symptoms subsided Marked improvement
3	30	F.	B. Coli Alkaligenes	Nycturia Incontinence Lumbar pain	Pyelitis, Bilateral	5 years	14 days	5.3 Sterile	Uni-lateral renal and ureteral duplication Great improvement
4	65	F.	Proteus gram negative Bacilli	Dysuria Nycturia Tenesmus	Submucous fibrosis	3 years	12 days	4.5 Sterile	Urine clear Bladder fulguration Improvement
5	40	F.	B. Coli	Frequency Dysuria Hematuria	Pyelitis, Bilateral Ureterocoele	1 month	8 days	5 Sterile	Urine clear Symptoms relieved
6	35	M.	B. Coli	Dysuria Renal pain	Pyelonephritis Ureteritis	1 week	7 days post-oper.	5 Sterile	Exploration of kidney Ureterotomy with drainage Recovery
7	32	F.	B. Coli	Lumbar pain Dysuria Nocturia	Pyelitis ureteral stricture	1 year	11 days	5.1 Sterile	Ureteral dilatation Pyuria disappeared Symptoms relieved
8	41	F.	B. Coli gram positive cocci	Lumbar pain Dysuria	Nephro- lithiasis Bilateral	1 year	10 days	4.9 Sterile	Right Nephrotomy Left Nephrectomy Pyuria disappeared. Recovery
9	45	F.	B. Coli	Dysuria Nocturia	Pyelitis Bilateral Urethritis	2 years	8 days	5 Sterile	Urine negative Symptoms relieved
10	43	F.	B. Coli	Frequency Lumbar pain	Nephro- lithiasis	6 months	10 days	4.5 Sterile	Nephrotomy Urine negative Good recovery

Pyuria, a symptom only, should be investigated thoroughly as to its source. One case of diverticulum of the bladder yielding coli bacillus was greatly improved by the use of mandelic acid therapy. One case of submucous fibrosis of the urinary bladder is included in the series with a duration of over three years. Three cases of nephrolithiasis are also included. One case of unilateral renal duplication is also reported.

Evidence of renal irritation should be looked for and the presence of red blood cells and casts noted. Any systemic manifestation as prolonged headaches, dizziness and nausea on the part of the patient means intolerance to the drug.

the experiment and Majorie L. Majer for her bacteriological assistance.

From Loyola University Medical School and Mercy Clinic, Chicago.

THE APPRECIATIVE HUSBAND

"I declare," complained Mrs. Duzzit, "I shall certainly have to punish the children."

"What have they been up to now?" asks Mr. Duzzit

"They have simply upset my sewing room. Nothing is where it should be. Needles, spools of thread, scissors, darning balls and everything have been poked away into the most unexpected corners. I had to search all afternoon to find a card of buttons. It is perfectly exasperating."

"My dear, the children didn't do that, I did it."

PLACE OF VAGINAL CESAREAN SECTION IN OBSTETRICS

With presentation of 34 cases.

CHAR. FOURNARAKIS, M.D.

CHICAGO

Dührssen in 1870 recommended the use of deep incisions in the anterior and posterior lips of the cervix uteri in order to enlarge its orifice and to allow the passage of the fetus.

Shortly afterwards it was proved that these incisions were not sufficient because they did not adequately overcome the resistance of the internal os.

Furthermore one could not suture this incision if it happened to extend very high into the body of the uterus during the extraction of the fetus.

It was for these reasons that Dührssen in 1895 invented his operation to which he first gave the name of "Anterior Vaginal Hysterotomy" and later in 1896 that of Vaginal Cesarean Section.

Shortly afterwards Dührssen modified the technique of his original operation by the addition of a posterior incision to the cervix.

The result of this modification was that he could now make the anterior incision shorter and consequently diminish the danger to the bladder during the extraction of the child.

Dührssen recommended this operation for the following types of cases which he divided into four groups.

Group 1. Anomalies of the cervix of the uterus and of the inferior segment, which create difficulties endangering the life of the mother, (including cancer, myomas, tumors of the ovary and stricture of the cervix).

Group 2. Cases which put the mother in acute danger, where it is necessary to empty the uterus quickly, such as in acute diseases of the heart, lungs and kidneys, in eclampsia and in premature detachment of the normally inserted placenta.

Group 3. Cases in which the mother is dead or dying.

Group 4. Cases in which the child alone is in danger as in a very protracted labor and during compression of the umbilical cord. In all these cases the author used always a general anesthetic, either chloroform or ether.

Adaptation of Dührssen's Operation at the Tarnier's Clinic. At Tarnier's clinic the indications for the Dührssen's operation have been 1. reclassified, 2. the anesthesia changed from general anesthesia to caudal block and block of the base of the broad ligaments, and 3. the operative technique itself modified.

The indications for Dührssen's operation in Tarnier's clinic are classified in two groups as follows:

Group 1. A. General pathology which include cases of—

1. Eclampsia.
2. Tuberculosis.
3. Cardiopathies.
4. Pyelonephritis.
5. Bright's disease.
6. Pernicious vomiting of pregnancy.

Group 2. B. Obstetrical pathology—

1. Hemorrhage in premature detachment of the normally inserted placenta.
2. Compression of the umbilical cord.
3. Protracted labor.
4. Anomalies of the cervix and inferior uterine segment.

Mode of Anesthesia. In Tarnier's clinic epidural block, also known as caudal block, is used in combination with block anesthesia of the base of the broad ligaments.

Caudal block always precedes block of the broad ligaments in order to obtain good relaxation of the perineum and to facilitate manipulation of the vagina and uterus.

Caudal block described in 1901 by Cathelin and Sicard consists in passing the needle through the sacral hiatus and depositing the anesthetic fluid within the sacral canal. It differs from intraspinal block in that the solution is distributed outside the dura matter.

The sacral canal is a prismatic space occupying the whole height of the sacrum. Its upper extremity is connected with the spinal canal, of which it is the continuation. Its lower extremity is the sacral hiatus, which is formed by the sacral cornua and the fourth sacral spinous process.

This sacral hiatus is an opening resulting from the defective or non-closure of the laminae of the last sacral vertebra, screened by a thin layer of fibrous tissue called the sacrococcygeal membrane (postero-inferior obturator membrane of Cathelin), stretched between the sacrum and the

(From the obstetrical and gynecological clinic Tarnier of Paris.)

coccyx and bounded on each side by the sacrococcygeal ligaments.

The sacral canal is filled with loose adipose tissue, richly vascularised, and communicates freely with the epidural space of the lumbar region.

In this are embedded 1. the dural sac, continued by the filum terminale, 2. the sacral nerve and coccygeal nerves, and 3. the sacral intraspinal venous plexus composed of a rich network surrounding the dural sac.

The dural sac contains the lower portion of the cauda equina and extends as far as the lower border of the second sacral vertebra in the adult, that is from seven to nine cms. from the apex of the sacral hiatus (Cathelin). In a few cases it may extend a little further down or stop at a higher level in the lumbosacral region.

The instruments utilized in caudal block are:

1. One nicked needle 8cm. long, of a diameter of 0.6 to 0.7mm.
2. One Roux's syringe of 20cc.

The anesthetic solution recommended by Mocquot in 1923 is made from:

Solution No. 1 Novocain 0.6gm.

Adrenalin (sol. 1:1000) 7 drops.

Distilled water 10cc.

Solution No. 2 Sodium bicarbonate 0.15gm.

Sodium chloride 0.10gm.

Distilled water 20cc.

These two solutions are mixed in a sterile glass immediately before the injection. This represents a 2% solution.

The average dose injected is 15 to 20cc. of the mixture.

Technique of the Injection. With the patient in the knee chest position the sacral hiatus is defined by the left forefinger. The injection is made into the sacral canal by way of this hiatus, which is found between the sacral cornua and the fourth sacral spinous process.

These three prominences, palpable in the majority of cases, form the angles of a triangular surface at the middle point of which the needle, with its stylet in and its bevel turned upward, is introduced through a wheel raised at this point in a direction making an angle of about 20 degrees perpendicular to the skin at the site of the puncture. After piercing the sacrococcygeal membrane which, like a screen stretched across the sacral hiatus, closes the lower extremity of

the sacral canal, the point of the needle strikes the anterior wall of the canal. It is then withdrawn 1 or 2 mm. and the hub of the needle swung downward toward the gluteal cleft, increasing the angle from 20 degrees to about 40 degrees or more if necessary. The needle is advanced gently and gradually into the sacral canal, always keeping along the midline until about 6cm. of its length has disappeared. When the needle has been correctly introduced its stylet is withdrawn and time allowed to make sure that no blood or cerebrospinal fluid come out.

In such cases the needle is drawn back a few millimeters until the flow ceases and the syringe, filled with the 2% solution is now connected with the needle. The aspiration test is made before the injection of the fluid, so as to feel quite certain that no intraspinal nor intravenous injection is actually made.

The solution then is injected *very slowly*. At the end of 10 to 15 minutes the effect of the anesthesia is recognized by a gaping of the anus and the vagina.

Now block of the base of broad ligament can be performed.

Technique of the Block of the Broad Ligaments. It is well known that around the lateral aspects of the cervix of the uterus as well as to its posterior surface there exists a plexus of the sympathetic nervous system, the ganglions of Lee-Frankenhauer.

This plexus receives ramifications from the inferior hypogastric plexus, from second, third and fourth sacral nerves.

This plexus is situated at the vicinity of the lateral vaginal cul-de-sac beneath and behind the point of crossing of the ureter with the uterine artery.

It is in this space where the anesthetic solution, novocain 1%, should be injected.

For this purpose a fine Pauchet's needle and a metallic syringe of the same author are used.

The operator places a retractor, about 7cm. long and 3cm. wide in the lateral vaginal cul-de-sac to expose the area which should be infiltrated, while at the same time he pulls the cervix with a Museux's forceps outwards and to the opposite direction to the retractor.

This maneuver is always easy thanks to the caudal block previously made.

Now the needle is sunk to the lateral cul-de-sac closely to the walls of the cervix and it is

directed a little backwards. It thus reaches at a distance of 1 to 2 cm. deep in the base of the broad ligaments where 10cc. of the 1% novocain solution are injected.

The same maneuver at the other side is repeated, and in order to complete the anesthesia 10cc. of the same solution are injected into the anterior and posterior cul-de-sac.

Let us not forget that often this block of the broad ligaments alone provides a complete anesthesia, permitting a painless operation especially in the multiparae with soft tissues, the same operation being more difficult in primiparae.

The caudal block paralyzing the perineum and the vagina, gives more access to the operative field, permitting the operator to work freely. (It is also understood that the patient may have a sedative before the operation as morphine sulphate with atropine etc. if there is no contraindication.)

Besides this action on the perineum and the vagina, the caudal block, similar in this effect to the spinal anesthesia, acts upon the muscular tonus of the uterus which it stimulates and provokes after the operation a strong retraction of its fibers, stopping almost completely the post-operative hemorrhages, so frequent and severe, during the therapeutic abortion made under general anesthesia.

Technique of the Operation. The operation in itself is easy. Many variations exist. We will describe the one which is adopted in Tarnier's clinic. After the caudal block is done, the patient is placed in the obstetrical position, with the operator facing the pelvic outlet. The bladder must be carefully emptied immediately before the intervention. The external genital organs are painted with tincture of iodine and are carefully cleansed with alcohol.

In cases in which the vulva is very narrow a large episiotomy is done as a preparatory step of the operation.

A large retractor pushes down the posterior vaginal wall and another one but smaller in size, placed against the anterior vaginal wall, makes the cervix of the uterus very accessible to our instruments.

Then a forceps of Richelot grasps the cervix. If the cervix is already open two forceps of Richelot are placed on the anterior lip, one on each side of the midline.

When the cervix is entirely closed it will be

necessary to introduce some Hegar's bougies, in order to render it permeable.

When it is not an emergency case we often use a laminaria, introduced in the cervix the evening before the operation.

First step of the operation. In the first place the operator will cut the anterior cul-de-sac and will push up the bladder. He may cut longitudinally or transversely. It is preferable to incise transversely the anterior vaginal wall one finger's breadth above the external orifice of the cervix.

The incision is done with a pair of blunt curved scissors and one should use the extremity of the scissors for pushing up the vaginal wall. When the detachment of the anterior vaginal wall is begun a finger is introduced which will continue the separation of the cellular tissue that separates the bladder from the inferior segment. The finger finds easily its way into the uterovesical space. Then a narrow retractor is slipped there and the operator has under the eyes the inferior segment that he is going to incise.

Second step. The second step, also called "step of the uterine section," is very easy if one incises the uterus only after a good exposure of the part to be cut. It is very important to cut exactly in the middle line and not in the lateral areas of the uterus. To do this one should incise between two forceps which pull down the segment before the section. The forceps symmetrically placed pull down while a cut with the scissors is given to the cervix and then two new forceps are placed above the first ones, and they are pulled down while a new cut is done. The same maneuver is repeated until 10cm. of the cervical tissue is incised. From time to time the forefinger placed at the end of the incision separates the cellular tissue, thus facilitating the placement of the forceps at a higher level.

When one judges that the section is sufficient he takes out the forceps and later the retractors and introduces the hand into the enlarged orifice. When the child is not big the anterior section is sufficient, but in the cases where this incision seems to be small for the passage the posterior cervical lip is found and incised directly from forward to backward.

Third step. This step includes the extraction of the fetus and the placenta. In some very rare cases the bag of waters remains intact. More often it is ruptured during the operation. When it is

not ruptured one should open it and in general this maneuver is followed by a regular version. When the head is engaged a forceps is applied. After the fetus is extracted one should wait for the natural delivery of the placenta, but when a hemorrhage is present one should introduce the hand in the uterus and make a manual detachment and extraction of the placenta.

Fourth step. It consists of the suturing of the uterine section. One must at first place again the retractors in the vagina to find the flaps of the cervix. Dührssen advised placing a suture in each lip of the cervix before removal of the fetus, to facilitate the pulling down of the cervix. But nothing is easier than to find them with the use of the retractors. Each flap of the incision is held with a Museux's forceps. Thus the suture can be made entirely outside the vagina. One should search for the upper angle of the wound to make sure that the incision does not extend higher. At the same time an examination of the urinary bladder is made. In case there exists any lesion to this viscus a separate suture is made.

The suture of the Cesarean section will begin from above downward, including all the thickness of the uterine wound of which the edges must be well adjusted. The suture will be done with catgut No. 2 with interrupted sutures. If the posterior lip of the cervix had been cut it is repaired in the same way.

Should one suture the vaginal wound? Certain operators recommend it. In general this is not necessary and it is sufficient to put a piece of gauze in the cleft that separates the inferior segment from the bladder. If one has decided to suture the vagina he should use a drain. When the uterus does not bleed the operation may be considered as finished, but in the case where it is bleeding it is better to place a tampon in the uterus to overcome the uterine inertia.

Modification of the Technique. Döderlein advises incision of the cervix of the uterus without any detachment of the bladder from the uterus, but this is bad technique.

Dührssen in his second procedure begins by introducing a bag in the cervix. Pulling down the tail of the balloon it becomes easier to detach the vagina and to bring down the inferior segment while making the section.

The 34 Cases from the Clinic Tarnier. As can be seen in the Table 1 we performed the vaginal cesarean section mostly on women suffer-

ing from tuberculosis, eclampsia and pre-eclampsia as well as on those suffering from pyelonephritis and Bright's disease. The tuberculous patients were sent to us by special phthisiologists.

In the Table 2 it is evident that the duration of pregnancy of the women selected for this operation was mostly between the third and seventh month, that is when the size of the baby is still small.

In the Table 3 one can readily see that the patients operated on had various parity but with predominance of primiparae (almost 50% of all the cases.)

TABLE 1

Pathological conditions for which the operation was done.	Number of cases.
Tuberculosis in general.....	16
Pre-eclampsia	4
Eclampsia	7
Pyelonephritis	3
Bright's Disease	3
Cervical Retroversion	1

TABLE 2

Age of pregnancy.	Number of cases.
2-3 months	5
3-5 months	15
5-7 months	8
7-8½ months	6

TABLE 3

Parity.	Number of cases.
I parae	18
II parae	6
III parae	5
IV parae	3
V parae	2

TABLE 4

Kind of Anesthesia.	Number of cases.
Caudal Block	4
Caudal and Block Anesthesia	8
Block and Inhalation Anesthesia	4
Block of the broad ligament.....	8
General Anesthesia	6
Spinal Anesthesia	4

We have lost four women out of 34 cases. This is to say that the maternal mortality is 11.76%. The fetal mortality being 82%.

From the four women that died one was a case of eclampsia and died three days after the intervention.

Two cases had a severe cardiopathy and died from cachexia ten days later.

The fourth case was a case of tuberculosis in extremis.

This shows that we have performed the evacuation of the uterus in particularly severe cases and that the deaths are not due to the kind of anesthesia or to the technique.

To illustrate this we will present an interesting case of eclampsia with albuminuria in order

to avoid annoying the reader with the detailed presentation of all our cases which otherwise were as severe as the one that we are about to describe.

As far as the fetal mortality is concerned one may understand that it is not as high as it at first appears, for the majority of the feti were not viable on account of the early period of the pregnancy. On the other hand the women themselves were suffering from the diseases for which the operation was done.

A CASE OF ECLAMPSIA AND ALBUMINURIA

Mrs. C. D., 17½ years old. Patient being in coma, history not taken. Shortly after admission in Hospital, Blood Urea 0.75 gm. Blood pressure 15½mm-10mm. (with Vaquez apparatus). Vaginal examination. Inferior segment not well formed, cervix closed, long and rigid. We decide at once on a vaginal cesarean section.

After the separation of the anterior vaginal wall from the urinary bladder we incise the cervix and the inferior segment, making an application of forceps. We extract a live child of masculine sex, weighing 1400 gm.

The placenta was delivered by expression. Its weight was 400 gm. and it presented a little congestion with moderate hemorrhagic areas.

A small quantity of gauze was put in the anterior cul-de-sac and the patient was put to bed.

The patient had 26 crises between the operation and the next day at 9 o'clock A. M. as follows.

At 12 hrs. 25 min. she had one crisis. The crises were repeated at the following hours:

12 o'clock 55 min.	19 o'clock
14 o'clock	20 o'clock 40 min.
14 o'clock 20 min.	21 o'clock 20 min.
16 o'clock	21 o'clock 25 min.
16 o'clock 15 min.	21 o'clock 35 min.
17 o'clock 15 min.	22 o'clock 15 min.
17 o'clock 40 min.	22 o'clock 35 min.
18 o'clock 10 min.	22 o'clock 45 min.
	23 o'clock 40 min.

24 hrs.

The next day she had the following crises at:

0 hrs. 15 min.	4 hrs. 10 min.
0 hrs. 50 min.	4 hrs. 40 min.
2 hrs.	6 hrs. 25 min.
3 hrs. 50 min.	13 hrs. 35 min.

Medication at 8:30 of the first day morphine 1cg.
at 10:30 of the same day chloralum 3gm.
at 11:30 of the same day morphine 1cg.
at 1:30 of the next day chloralum 2gm.
at 4:30 of the same day chloralum 3gm.

The second day after the operation the patient had only two crises but the coma became more deep and finally she died three days after the operation.

Her temperature at the first day was.....38°.8C
The second day40°.2C
Before her death it reached to.....40°.6C

CONCLUSIONS

Vaginal cesarean section may be employed in any case in which the necessity for delivery is urgent and the cervix is too rigid to permit a rapid manual or instrumental dilatation without

danger of serious injury to the soft parts, or when the attempt to induce labor by the use of bougies or dilating bags has been made and proved a failure and the symptoms preclude further delay. It should never be undertaken in patients who are supposed to be infected.

There are two definite contraindications to the operation. There must be no bony disproportion and the cervix must be accessible.

Vaginal cesarean section is particularly adapted for use in early pregnancy where abortion is urgently indicated and the cervix is entirely unprepared and rigid. This will be found particularly true in patients with serious heart lesions, who must be aborted to save their lives, also in eclampsia and in patients who are bleeding to a dangerous degree and in whom the rigid cervix renders a rapid dilatation impossible. In these cases the trauma which results from attempts to dilate the cervix may prove the final factor in causing the death of the patient, whereas rapid incision of the cervix and emptying of the uterus may give the patient a chance for recovery.

The operation is more likely to be necessary in primiparae, especially in women with long conical cervixes, the dilatation of which may prove extremely difficult and prolonged.

This operation is also likely to be done in women less than 8 months pregnant and finally we find that it is more convenient for pathological than obstetrical cases.

Thus the vaginal cesarean section so made, caudal block and block of the broad ligaments, seems to provoke less shock than the abdominal hysterotomy and presents more advantages than any other procedure for the rapid emptying of the uterus from below, and we have but to urge a greater familiarity with this method and its wider use in suitable cases.

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PROCTITIS

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Proctitis, rectitis or inflammation of the rectal mucosa is probably the most frequently encountered of all rectal affections, is of more common occurrence than generally supposed, and is also directly responsible for the production of many disturbances which in turn give rise to symptoms mistaken for distinct diseases. In a study of 500 consecutive patients from private and hospital practice, Landsman¹ found 42% to have proctitis, either alone or in conjunction with other rectal disease. Failure to appreciate the importance of proctitis as a causative factor of many rectal complaints is responsible for the continuance of much suffering by proctologic patients apparently cured of some other rectal or extra pelvic lesion. In the course of examination of a patient suffering with hemorrhoids, fissure, cryptitis or pruritus, it is not unusual to observe that the symptoms are those of chronic proctitis aggravated and intensified by such tissue changes as the disease produces.

Proctitis may be produced by a number of causes any and all of which tend toward progressive inflammatory processes, acute, chronic or ulcerative.

Acute Proctitis: Acute catarrh of the pelvic bowel occurs in all conditions of life, children being affected as frequently as adults and like catarrhal inflammations of the respiratory mucosa it comes on suddenly, may usually be traced to a definite cause, and unless modified by physiologic or pathologic factors of the sigmoid or rectum, it will usually disappear when the exciting cause is removed.

The pathologic changes are usually limited to the mucosa, although the crypts of Lieberkuhn, the submucous tissues, the muscular layer and even the peri-rectal tissues may be involved. If appropriately treated permanent damage rarely results; but in neglected cases prolonged invalidism may occur.

Etiology: The anatomy and physiology of the rectum and sigmoid render these organs very susceptible to catarrhal changes, which are often not limited to the mucosa. The crypts in the mucous membrane are potential pockets for the lodgement of infectious material. The venous

circulation being in the opposite direction of the fecal current is always sluggish. In the colon the fluids are absorbed from the food debris. Here toxins pass into the lymphatics and enter the circulation. As the fecal mass hardens, it excoriates and sometimes actually tears the mucous membrane as it is being expelled. These chemical and mechanical irritations lessen the vitality of the tissues and thus prepare the field for bacterial infection of the mucous membrane the exact nature of which is not always easy to determine. Probably many different kinds of bacteria are capable under favorable conditions of causing proctitis. Owing to the large number of microorganisms which are habitually present in the rectum even under normal conditions, the difficulty of ascertaining which is the specific cause in any individual case is manifest. (Mummery.)²

As the rectum, sigmoid and colon have the same structure and function, the same catarrhal disturbances affect all parts, and therefore the term "proctitis" is the more accurate designation for this class of disturbances. However, it is often hard to explain just why the disease is so localized in a given case. So-called catarrhal inflammation of the intestinal mucous membrane (an inflammation that cannot be accounted for by the presence of any of the now known bacteria) is very common, especially in the cities where modern methods of living subject persons to over indulgence of highly seasoned and stimulating foods and the maintenance of high nervous tension, together with lack of outdoor exercise.

Our individual powers of resistance vary so much that, although, some seem to maintain good health in spite of these adverse conditions, others become indisposed by the slightest exposure or indiscretion; even a change of drinking water will, in certain individuals, light up a constipation of the colon or rectum.

The onset of these catarrhal changes sometimes is insidious and it may be impossible to define accurately the beginning pathological alteration, because of the difference of temperament and habits of individuals. The prominent symptoms of inflammation in any part of the colon are referred reflexly to the rectum, and it may be added that the inflammation is seldom confined to any one locality, it may begin either

in the cecum or the rectum and spread the whole length of the colon.

There are many other inflammatory invasions of the rectal mucosa due to dysentery, gonorrhea, syphilis, erysipelas or diphtheria although these last two are rather exceptional curiosities but excepting dysentery, these specific forms of infection are secondary to similar infections elsewhere, and our considerations will here be limited to the discussion of catarrhal proctitis and sigmoiditis, acute and chronic.

Among the causes of proctitis, the following may be mentioned: Irritants directly attacking the mucous membrane such as worms, highly seasoned foods or hard substances in the fecal mass, fish bones and hulls of cereals. Fecal irritants are common causes both of the acute and chronic type. Constipation and fecal impaction of the rectal pouch alternating with periods of liquid feces often induce a sudden inflammation of the sigmoid flexure and rectum, or the rectal disturbance may be an extension of colitis resulting from the passage of the irritating discharges from above. Seasonal changes of food or water, particularly during the summer, or sitting on a cold wet seat, are often exciting causes. In all of these conditions sudden and violent changes are important factors. Proctitis may result also from the use of strong purgatives, such as aloes, calomel, gamboge and colocynth which are very provocative, and poisonous drugs may also excite a proctitis. Landerer³ reports the case of a boy who was murdered by inserting phosphorus matches into his rectum; and Pennington⁴ speaks of a poisoning case where death resulted from an enema of corrosive sublimate. Other notorious offenders are: irritating suppositories, or as an extension of inflammation from hemorrhoids, prolapse of, or eczema about the anus or from the disease of neighboring organs, such as the bladder, prostate gland, vagina or uterus. In a few instances, new growths within the rectum such as polpi, adenoma, villous growths and papilloma, also intussusception occasion periodic exacerbations or protract the chronic proctitis.

Recurrent attacks of what appears to be acute proctitis will usually be found to be an acute manifestation of chronic proctitis with definite tissue changes. Adults who suffer repeated or intermittent attacks of rheumatism or gout or who sit on cold leather carriage seats and also those who are peculiarly susceptible to sudden

chilling of the skin will often suffer with attacks of acute catarrhal proctitis.

An individual idiosyncrasy to certain drugs must always be remembered, such patients are very susceptible to one or more of those drugs and may get an attack of proctitis from quite small doses which would cause no inconvenience to a normal individual. Among the more common of these drugs are calomel and all preparations of mercury, arsenic and nux vomica.

Symptoms: Acute proctitis in its clinical course closely resembles that of acute rhinitis. The prodromal symptoms may be a chill and elevation of temperature with general malaise, or it may begin suddenly with symptoms localized in the bowel.

There is a sensation of fullness, weight, heat and burning in the rectum, or in severe cases actual pain, which radiates to the sacrum, the other pelvic organs or down the thighs. Irritation of the trigonum vesicae causes frequent micturition, tenesmus and sometimes retention of the urine. The rectum feels full, the anal sphincters are contracted and there is a constant and ineffectual desire to empty the bowels. The feces, usually liquid, are forcibly ejected through the small orifice. This constant straining produces prolapse of the mucous membrane, especially in children. The patient always is more comfortable lying down than when up and about. During the first twenty-four hours, the discharge from the rectum is liquid fecal matter; later, the engorged mucous membrane bleeds and the discharges are tinged with blood and contain mucus. In very severe cases, the mucous membrane will ulcerate and pieces slough off, accompanied with considerable discharge of clear blood. From this time the discharges contain mucus and blood mixed with feces.

An early persistent symptom is, the constant rectal tenesmus. The patient has a frequent and urgent desire to go to stool, but each time voids only a few ounces of liquid material accompanied with much straining and pain. The anus is red and painful, the sphincter irritable and spastic, and the introduction of the examining finger or the speculum is sometimes so painful as to necessitate an anesthetic. In the early stages the parts feel dry, feverish and swollen to the touch: later after secretion has started, the surface is moist and slimy, but the walls are so swollen as to seem closely approximated.

Specular examination at this stage reveals a bright red, dry, velvety and edematous mucous membrane.

Bright red blood vessels will be seen coursing the mucosa similar to that found in acute conjunctivitis and the whole rectal mucous membrane will have a bright red color.

If examination be made a few days later there will be found ulcerations of perhaps but one or two small points or, there may be several some of which may be quite deep and involve the whole thickness of the mucous membrane, even perforating the gut. When ulceration occurs above the peritoneal fold, it may cause peritonitis; when below that line an abscess may result. Chronic or recurring proctitis in this way may cause a stricture.

Prognosis of Acute Proctitis: Proctitis either in acute or chronic form is always a serious matter, deserving of the physician's most careful attention, because the inflammation itself may debilitate and especially because complications that may invalid the patient are prone to occur.

Each case is a law unto itself. Under rest and treatment, the symptoms subside and the patient recovers in a week or ten days, but if not properly managed, the condition may become chronic. If the mucous membrane alone is involved, a complete recovery results, even though ulceration has occurred; however, there is always danger of perirectal abscess, fistula or stricture of the rectum. Sometimes lymphangitis or phlebitis may protract convalescence.

Treatment of Acute Proctitis: The treatment of acute proctitis varies considerably with the exciting cause, and therefore, a thorough examination must be made before instituting any treatment. The parts being irritated and inflamed, the examinations are very painful, unless an anesthetic, general or local, is administered. In many instances where for various reasons chloroform should not be given at the time of the examination the patient may be relieved of most, if not all, of the pain by the application of a 2% solution of procaine. A general anesthetic has much in its favor because while the patient is thus asleep, the sphincter may be thoroughly dilated, in that way relieving the tenesmus and greatly facilitating subsequent examination or treatment. At the same time, any local trouble or cause of the

proctitis may be removed, thereby accomplishing two things at one sitting.

The first indication for treatment naturally is to remove the cause. Impacted feces or foreign bodies must be removed carefully so as not to injure the mucous membrane. Oxyurides must be carefully searched for. The anal sphincters should be dilated to permit the easy and free emptying of the rectum. Decomposed, irritating infectious intestinal contents should be removed by means of a large dose of castor oil or saline to produce a watery stool and a free flushing. After the bowel has been thoroughly emptied, it should be irrigated two or three times during the day with physiologic salt solution at 110 degrees (1 teaspoonful of salt to 2 quarts of water) or full strength boric solution.

For this irrigation the patient should be placed in the lateral prone position with the hips elevated; the irrigator reservoir being held one and one-half or two feet above the body. The irrigator tip should have a large return flow to allow free exit of debris. The solution is allowed to run into the bowel at a slow rate.

As soon as the patient experiences a desire to expel the fluid the inflow is shut off. Sometimes this uncomfortable sensation comes on before a sufficient quantity of solution has been admitted and is due to the over distention of the bowel by either the normal accumulations or spasmodic contraction of the circular muscle fibers. If the flow is checked a few minutes the excitement subsides and the solution already within the bowel rises to a higher level. Changing the position of the patient to another position and massaging the colon gently will assist the irrigating solution to pass on up.

Douching in this manner washes out a large amount of infectious material, such as secretions, fecal accumulations and multitudes of microorganisms; it dissolves mucus and pus, flushing them out as shreds; also it contracts the vascular structure, thereby stimulating circulation, relieving the local congestion, and depleting the tissues. It is antiphlogistic, antispasmodic, antiseptic, antacid, antifatulent and anodyne, producing a restful state of the body and a tendency to sleep. It softens cicatrical and indurated tissue, equalizes the circulation of the blood, and stimulates secretion and excretion. It is astonishing how much mucus, shred, casts and other impurities

the hot water causes to be discharged during and after the hour's treatment.

Following the douching two drams of 25% solution of Fl. ext. hydrastis is injected into the rectum and the patient is instructed to retain it. If the patient is seen during the later stages when ulceration and sloughing of the mucosa has begun, I have had greater satisfaction by flushing with plain sterile water and then injecting two or four drams of 1:2000 silver nitrate solution (1 gr. to 4 ounces). If the pain and tenesmus are not relieved an injection of three ounces of starch water to which has been added ten drops of tr. opii gives prompt relief and may be repeated as found necessary. Enemas cannot be substituted for the irrigation as they increase the tenesmus.

Opium suppositories are not satisfactory for this purpose. Their presence causes irritation and increases the inclination to strain.

When the patient has been put to bed following the irrigation much relief is obtained by applying a hot water bag to the perineum.

If the symptoms continue after the third day under this treatment, it will be found there are ulcers on the rectal wall and these must be treated locally. The patient is placed in the knee-chest position (which secures atmospheric dilatation) then a speculum is introduced and the entire rectum inspected. Any ulcer present is wiped free of mucus and debris and painted with pure ichthyol or a 5% silver nitrate solution.

If a number of ulcers or grayish spots are seen a rectal spray over the whole surface will be found very efficacious.

In those cases where there is profuse discharge of mucus and in which the sigmoid and lower colon seem to be involved irrigations with 2% solution of alum act nicely.

Diet in Acute Proctitis: The diet should be carefully arranged so as to be absorbable and nonirritating and of such a variety as will insure soft or semisolid evacuations. A largely absorbable dietary is advisable also, in order that the bowel may move less frequently, thus diminishing the deleterious peristaltic movements. Milk should be excluded because it occasions hard, irritating curds in the feces. Fibrous vegetables such as cabbage, kraut, celery and green corn are also forbidden, for they irritate the bowel. In

their stead gruels, of oatmeal, rice and barley, egg albumen, gelatin, meat broths and the proprietary prepared foods and peptones should be ordered. Water should be drunk freely, six to eight glasses daily, also buttermilk and chocolate.

If there is any doubt of the purity of the water it should be boiled, and then to overcome the flat taste it may be aerated by whipping it with a revolving egg beater.

As the inflammation subsides constipation is apt to occur and a full glass of flaxseed tea at night will be found to act as a mild laxative and at the same time is soothing to the intestine.

Flaxseed Tea Recipe: Take five tablespoonfuls of whole, unbruised flaxseed, pour over it a quart of boiling water and boil for ten minutes, strain through muslin while hot, flavor to suit by adding before cooking, one teaspoonful of pulverized licorice or one lemon, or ten drops of oil peppermint or wintergreen, and two tablespoonfuls of sugar, or after cooling add a wine glass of wine. Make fresh tea each day.

After the colon has been thoroughly cleaned out, and cathartics are not needed, liquid petroleum, one dessert spoonful three times daily after meals, acts as a soothing dressing during its evacuation through the rectum and also prevents the formation of hard scybala. Its dose must be regulated from day to day to avoid leakage.

The patient should be kept in bed until all pus and blood have disappeared from the stools, because when he is up and about the pendent position of the blood vessels, together with the thinness of their walls, and the associated congestion and inflammation, give rise to venous stasis, which seriously impedes or even prevents regenerative changes.

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Staphylococcus toxoid caused healing in 70 per cent of cutaneous staphylococcias (boils, carbuncles, etc.). In the experience of these authors this product was without effect in staphylococcus septicemia and osteomyelitis. Debre, Bonnet & Thieffry, *Paris Med.*, 26:494-500, 1936.

Miscellany

TREATMENT OF SCHIZOPHRENIA WITH METRAZOL BY PRODUCTION OF CONVULSIONS

Isidore Finkelman, Chicago: D. Louis Steinberg and Erich Liebert, Elgin, Ill. (*Journal A. M. A.*, March 5, 1938), began the use of metrazol in the treatment of dementia praecox at the Elgin State Hospital, March 1, 1937. Among the sixty-six patients in their group, all types of dementia praecox except the simple were represented. The duration of the psychosis ranged from two months to seventeen years, in the majority of cases being more than two years. No patient who had had the disease more than two years had a complete remission. However, a remission with a slight defect could be obtained. The percentage of remissions drops very rapidly, so that after a duration of three years no remission is to be anticipated. The best results are obtained in treating the early types of catatonic and paranoid dementia praecox. No patient who had been ill less than one year failed to show some response to treatment. The number of injections necessary to produce a remission increases with the duration of the psychosis. For patients ill eighteen months or less, the average number of injections was ten and three-tenths and for those ill more than eighteen months twenty-five and seven-tenths. Many patients gain weight during treatment. The convulsive seizure produces many changes in the organism, such as anoxemia followed by increased oxygenation, an increase in the supply of blood to the brain and an increase in the activity of the muscles with all the chemical changes accompanying such activity. All or some of these factors may be responsible for the remission produced in the schizophrenia. The problem still remains, however, of how physical changes in the body cause psychic symptoms to appear and disappear. It was found that 85 per cent of the patients whose symptoms were less than six months in duration had a remission. Contraindications to this therapy are acute infectious diseases, pulmonary disease and cardiovascular disorders. There were no fatalities, and the only complications encountered were dislocation of the mandible and dislocation of the humerus.

ANCHORED ALL IN HOPE

Hope is the anchor which holds men when storms are surging about them. It points the way to fairer days and brighter prospects. It lifts the shadows from the face, takes the sadness out of the heart, heals the sickness of the soul. Take hope away and you make a wreck of man. Hope is the rainbow that spans the dark clouds, and the sunshine that reminds us of gracious promises; it is the fire that warms the chilliness of life, around which we gather to inspire new courage for strifes ahead. With hope man is not—never can be—lost, and has in him all the possibilities of all the ages past, of the present one, and all that are yet to come. Take away the forest; dissolve the landscapes; wither the flower, blot out the sun; extinguish the stars; dry up the oceans; level the moun-

tains; let the earth swirl in chaotic space, "rayless, treeless, herbless," but leave man the enthusiasm of hope, and he will smile, looking out beyond those material disasters, will confidently expect he is not born to die.—S. D. Childs.

HAVE A FIRM FAITH IN YOUR PLANS

Faith is belief; take it out of life and what have we to live for? We need faith in truth, that it will ultimately prevail; faith in goodness, that it may lift us above the evils of life; faith in human progress, that it will finally carry us beyond all that now clogs, retards and hinders our plans; faith in our fellowman that he is—as a whole—noble, brave, daring, just, true, sympathetic, kind and self sacrificing; faith in God, whose omnipotence is our guarantee that all things are ordered by Him, all things controlled by Him. Faith in ourselves, that all the possibilities for good that lie latent and dormant will yet be aroused to full and effective action for the good of all. Faith to uphold the right against the wrong; to defend the oppressed against the oppressor. Support the weak against the strong; faith to keep men free; faith that no life can be a success without a purpose. Faith in education, in science, in philosophy, in government, in religion, in the triumph of right, in the rule of justice, in all that elevates, ennobles, lifts up, and carries us forward.—S. D. Childs.

SUGAR-FED, VITAMIN STARVING AMERICA

Eva Hazelton Crites, dietitian, in *Life and Health*, September, 1937, says:

Before the year 1600, sugar was known only as a curiosity or medicine. By 1867, Americans were consuming an average of twenty-four pounds of sugar per capita annually. In 1928 this figure had been multiplied by five, sugar consumption having reached a peak of nearly 120 pounds per capita annually. The depression did us one good turn by reducing this figure to 102 pounds. However, it is slowly but steadily increasing again. In spite of the marked drop in candy sales during depression years, Americans bought 1,743,539,000 pounds of candy at a cost of \$252,990,000 during 1935. This would amount to 13.7 pounds of candy for ever man, woman, and child in this country. Candy manufacturers gloated over the fact that America's sweet tooth was 6.2 per cent sweeter in 1935 than in 1934. No wonder that our land has been called "sugar-fed, vitamin-starving America."

FEDERAL CONTROL OF HOSPITALS

Senator J. Hamilton Lewis at a meeting of the representatives of the American Medical Association said, in effect, "whether you like it or not you must be prepared for some form of regulated medicine."

He intimated that the control would be from the federal government. How that would operate is illustrated in cities where there are naval training stations. In these locations, a naval doctor is delegated by the naval authorities to take care of the civilian dependents of the enlisted men.

In a city of 30,000 people it has been found that the average attendance at the dispensary of the naval hospital from this civilian population was twenty-three a day; the house calls from ten to twelve a day. In addition to this, operations requiring hospitalization would average two to three a week. It can be readily understood when services of this kind are furnished, the income of the local physician is markedly affected.

Specifically, if one-half the dispensary cases paid, and that is a fair average, it would amount to about seven thousand dollars a year; one-half of the house cases would mean an income to the doctor of about ten thousand dollars a year so that it would aggregate close to operations but it can be estimated not less than five thousand dollars a year so that it would appregate close to twenty-five thousand dollars a year. This amount is taken out of the income of the civilian practitioner.

It is true that this is a service to the enlisted personnel, but if the same services are given to the citizens at large the income of the local doctor will be diminished.

What is to be done? Unless the physicians as a whole give this question serious consideration, and adopt a method agreeable to all, it is believed the government will step in and make plans whether the doctor likes it or not.—*Editorial: Rhode Island Med J., Dec., 1937.*

MAN

"Man comes into this world without his consent and—leaves it against his will. During his stay on earth, his time is spent in one continual round of contraries and misunderstandings with his fellow man.

"In his infancy he is an angel. In his boyhood he is a devil. In his manhood he is everything from a lizard up. In his dotage he is a fool. If he raises a family, he is a chump. If he raises a small check, he is thief and the law raises hell with him. If he is rich, he is dishonest, but considered smart. If he is in politics, you can't please him, as he is an undesirable citizen. If he goes to church, he is a hypocrite. If he stays away from church, he is a sinner and damned. If he donates to foreign missionaries, he does it for show. If he doesn't, he is stingy and a tightwad.

"When he first comes into the world everybody wants to kiss him. Before he goes out of it, they all want to kick him. If he dies young, there was a great future before him. If he lives to a ripe age, he is in the way, and is only living to save funeral expenses.

"This is a hard road, but we all like to travel it just the same."—*Exchange.*

IF WE ARE TO HAVE REGIMENTATION, LET IT FUNCTION PAINLESSLY

A report setting forth in detail what the public gets and what it pays when sick, was completed two or three years ago. It is known as the Costs of Medical Care.

The committee making that report was divided in opinions. Ever since then, medicine has been divided into two camps which are farther than ever apart today.

Hope for rapprochement seems slim indeed. On the one side are arrayed those who believe in the efficacy and in the desirability of private practice so well known throughout our land; on the other side are those who see doctors as employees of the Federal Government.

Heretofore, we have chosen to regard illness as a matter of personal concern. Under the new concept, illness becomes a matter of public concern. Heretofore, we have regarded the ill as patients, now they are regarded as citizens unable to perform their work. Under the old order, the one which we know so well, sickness was a matter of personal interest; under the new, it becomes a public problem. Under the old order, payment for sickness was an individual liability; under the new, it becomes a public liability. It is true that the new plan contemplates care of the indigent only. However, the new plan is increasing the tax burden and those who were once able to pay their own way are now depending upon public munificence. Such a plan is the greatest of leveling agencies. At first it shared the wealth, now it shares the health and if continued it will share the poverty. Already this is being manifested. Great universities, privately endowed, are no longer in receipt of large benefactions for endowment purposes. Tax supported institutions are growing by leaps and bounds in contrast.

Wherever a government places its funds there it supervises. As private benefactions diminish, taxation must increase if the race is to progress. Therefore, increased supervision is to be expected.

The proposed plan of federal care of the sick places the government in a directive position. Therefore, if the government is too paternalistic, individual initiative will be destroyed or curbed; if it is too politically minded, the mediocre will obtain possession of great administrative responsibility.

It scarcely needs to be mentioned that the care of the indigent is one step forward in the socialization of medicine. Many other steps will be taken as time and circumstances appear to point out the necessity for taking them. It is a congressional axiom that bureaus once established, like the brook, go on forever. We wish to point out that the doctor will have an easier time. Under such a system, his hours will be shorter and his pay as sure as is the credit of his government. The citizen, however, who is no longer a patient in the usually accepted sense of that word, will find himself under the care of several physicians whose tours of duty follow each other as the clock ticks off the hours.

If we are to have federal medicine, let it be set up under rigid civil service regulations thereby excluding political control. There is such a thing as an esprit de corps which makes for good service.

Many members of our Society have practiced medicine both privately and in public service. Better care has been given the patient under private practice than in public, unless there is absolute freedom from political and martinet control.

If we are to have regimentation, let it function painlessly.

THE MENOPAUSE AND ITS MANAGEMENT

Emil Novak, Baltimore (*Journal A. M. A.*, Feb. 26, 1938), declares that a distinction must be drawn between the treatment of menopausal symptoms and the management of the woman passing through the menopause. The vasomotor group of symptoms are the only ones which seem clearly attributable to the hormonal readjustment of the menopause, though it is possible that others may at times be directly produced. However, the menopausal woman may present many other manifestations only indirectly of menopausal significance, and yet often constituting real problems in treatment, which must be along psychic and general rather than endocrine lines. Only a minority of menopausal women need medical treatment, and a much smaller proportion require organotherapy. While the mechanism of the vasomotor menopausal symptoms is not clear, the immediate factor is quite certainly the cessation of ovarian function, and ovarian therapy with the now available effective preparations of estrogens is a rational procedure. The results are variable, rarely brilliant, but often satisfactory to both patient and physician. Light irradiation of the hypophysis may be tried if organotherapy is unsuccessful, but its too promiscuous use should be decried.

WAVELENGTH IN HEATING OF HUMAN TISSUES BY SHORT WAVE DIATHERMY

John S. Coulter and Stafford L. Osborne, Chicago (*Journal A. M. A.*, Feb. 26, 1938), confine their report to a discussion of the so-called selective thermal action of short wave diathermy. They carried out 279 temperature observations on the human thigh, using high frequency currents with wavelengths varying from 25 to 6 meters. They believe that wavelength by itself is not a marked factor in tissue heating in the living subject but that differences in machines, the energy delivered to the patient and technic are important factors. The electromagnetic field produces the most effective heating of live human tissues. The double cuff method of the electric field is an effective technic. Air-spaced electrodes are effective for deep tissue heating provided the anterior surface application is used. The electrodes should be applied to the anterior surface of the thigh equidistant from the cannula and in the same plane. The distance used from center to center should range from 7 to 11 inches (18 to 28 cm). Whenever other technics were employed less effective heating resulted. Technics such as the so-called through and through method, or other technics that apply the electrodes in a manner other than that indicated, are effective for superficial heating but quite ineffective for deep tissue heating.

John Graunt, an Englishman, published the first book on vital statistics in 1662. He was the first to note from the bills of mortality that more boys are born than girls, and that the population can be estimated from an accurate death rate.

TREATMENT OF CORONARY SCLEROSIS AND ANGINA PECTORIS BY PRODUCING A NEW BLOOD SUPPLY TO THE HEART

Harold Feil and Claude S. Beck, Cleveland (*Journal A. M. A.*, Nov. 27, 1937), discuss the results that they obtained in the treatment of coronary artery sclerosis and intractable angina by grafting vascularized tissues on the heart. Up to the present time they have done this operation on twenty-five patients. A sufficiently long interval of time has elapsed since operation so that the clinical results can be evaluated. Of the twenty-five patients operated on, sixteen are living and nine are dead. Necropsies were done on seven and in each case an advanced degree of coronary occlusion was found. In most cases extensive, permanent damage was present in the myocardium. Eight of the deaths occurred within one week of the operation. Only one patient died after discharge from the hospital and this patient did not have the usual operation done because he was in failure at the time. It is of interest to note that, while the mortality rate in the first twelve patients was 50 per cent, in the last thirteen patients it was 15.4 per cent. The last nine consecutive patients have gone through the operation without mortality. The results obtained by the operation are encouraging. The beneficial effect of the operation may be explained by several possibilities. One of these is an actual increase in arterial blood to the myocardium. The second is a redistribution of blood that passes through the coronary arteries. This is brought about by opening up intercoronary communications by surface trauma, grafts and powdered bone. The opening of intercoronary communications could explain the early improvement noted by many of the patients. This early improvement cannot be explained on the basis of blood from the grafts. A third possible factor to explain the improvement may be based on the interruption of nerve pathways from the heart. It is possible that the nerves lying beneath the epicardium are torn when the epicardium is removed.

Acute heart failure, involving as it usually does failure of the entire circulatory system, should be treated with drugs which not only improve the tone of cardiac muscle but will also improve parenteral circulation. For this purpose Adrenalin may be administered in doses of 0.5 to 1 cc. every three hours. Motley L., *Mississippi Doctor* 14-34, 1936.

Society Proceedings

CHICAGO MEDICAL SOCIETY

Regular meeting, Wednesday, April 6, 1938.

Program—"Present Conceptions of Diabetes Mellitus," Elliott P. Joslin, Boston, Massachusetts.

Discussion: James H. Hutton, Charles A. Elliott, Rollin T. Woodyatt and Robert W. Keeton.

Special meeting, Sunday, April 10, 1938, at Goodman Theatre.

"Medicine and the Government," Olin West, M. D.,

Secretary and General Manager American Medical Association.

Program—"General Principles in Bright's Disease," Wilber E. Post.

Discussion: The Relationship of the Intoxication of Pregnancy to Bright's Disease, William A. Thomas; The Relative Effect of Sodium and Potassium Salts in Bright's Disease, M. Herbert Barker; The Use of Lyophilic Serum in Nephrosis, C. A. Aldrich; The Influence of Mineral Metabolism in Bright's Disease, William S. Hoffman, and Proteinuria and Edema, Louis Leiter.

GREENE COUNTY

Minutes of the special meeting of the Greene County Medical Society held in Jerseyville, Friday, April 22, 1938.

This was a joint meeting of the Greene and Jersey County Societies and was held in the residence of Dr. H. R. Gledhill. The Meeting was called to order by Dr. H. R. Gledhill, president of the Jersey County Society, at 7:30 P. M.

Several communications were read and disposed of after which Dr. Harold H. Hill of the Department of Public Welfare, was introduced and placed before the society, a plan for Maternal Nursing in Greene County. Miss Nellie Garlit, Public Health Nurse of Springfield, also explained some points on the practical operation of this plan.

Dr. D. D. Munroe of Alton was next introduced and gave us a very splendid practical lecture on the early diagnosis and treatment of Pulmonary Tuberculosis. Following the lecture many questions were asked and a thorough discussion was engaged in.

The society then returned to the matter of the Maternity Nursing Program, and after considerable discussion it was moved by Dr. Garrison and seconded by Dr. Thomas that the Nursing Program be endorsed by the Greene County Society. Motion carried. Society adjourned at 10:15 P. M.

WM. H. GARRISON, Secretary.

Marriages

MAX K. HIRSCHFELDER, Chicago, to Miss Edith Hirsch of Winnetka, Ill., in February.

RICHARD J. S. SILVIS, A. Surg., Lieut. (j. g.) U. S. Navy, to Miss Naomi Holt, both of Great Lakes, Ill., Dec. 7, 1937.

Personals

Dr. Arthur Carlton Ernstene, Cleveland, discussed "Differential Diagnosis of Coronary Artery Disease" before the Sangamon County Medical Society, Springfield, April 7.

Dr. Henry E. Sigerist, William H. Welch professor of the history of medicine, Johns Hopkins

University School of Medicine, Baltimore, delivered the Arno B. Luckhardt Lecture at Albert Merritt Billings Hospital April 28; his subject was "Principles of Greek Medicine."

The John and Mary Markle Foundation of New York City has made a grant of \$10,000 to support research work on neurophysiology for three years under the supervision of Dr. Ernst Gellhorn, professor of physiology, University of Illinois College of Medicine.

Dr. Edmund Jacobson read a paper entitled, "The Onset of Sleep," at the Annual Meeting of the Mid-western Psychological Association, in Madison, April 21.

Dr. Philip S. Carney, among others, addressed the Chicago Tuberculosis Society April 14 on "Fallacies in the Handling of Pneumoconiosis Cases."

At a meeting of the Chicago Society of Internal Medicine March 28, Dr. Sidney A. Portis, among others, spoke on "Chronic Bacillary Dysentery."

Dr. Karl D. Dietrich, Columbia, Mo., addressed the Adams County Medical Society, Quincy, March 14, on "Relation of Urology to Obscure Abdominal Symptoms."

Dr. Walter C. Alvarez, Rochester, Minn., addressed the Springfield Medical Club, Springfield, March 17, on "Disorders of the Gastrointestinal Tract."

Dr. Erwin O. Strassmann, Rochester, Minn., among others, addressed the Chicago Gynecological Society April 15 on "Technic and Results of Routine Fetal Electrocardiography During Pregnancy."

At a meeting of the Chicago Council of Medical Women April 13, Drs. Helen Holt and Bertha A. Klien spoke on "Role of Vitamins in Ophthalmology" and "Ophthalmoscopic Diagnosis and Differential Diagnosis of Hypertensive and Renal Disease" respectively.

Dr. Robert H. Bell, health officer of Carlinville, has been appointed full-time superintendent of the district health unit composed of the counties of Scott, Morgan, Greene, Calhoun, Jersey and Macoupin.

The medical library of the late Dr. Malcolm L. Harris, President of the American Medical Association, 1928-1929, has been given to the library of Cook County Hospital by Mrs. Harris. The collection consists of about 600 volumes.

Dr. Harris served his internship at the hospital and later was attending surgeon.

Drs. Morris Fishbein, Editor, and Rosco G. Leland, Director, Bureau of Medical Economics, American Medical Association, addressed the North Side Branch of the Chicago Medical Society at the Drake Hotel April 7, on "Medicine and the National Policy" and "Hospital Service Plans" respectively.

Dr. Wilhelm Dressler, Vienna, addressed the Chicago Society of Internal Medicine April 25 on "The Cardiac Aneurysm: Its Diagnosis and Prognosis."

The Chicago Pathological Society was addressed April 11, among others, by Drs. George J. Rukstinat, Chicago, and Charles G. Weller, Aurora, Ill., on "Spindle Cell Sarcoma of the Prostate Gland."

The Chicago Roentgen Society was addressed April 14, among others, by Kenneth Corrigan, Ph.D., Harper Hospital, Detroit, on "Artificial Radioactivity" and Robert S. Landauer, Ph.D., "New Types of High Voltage Generators."

At a joint meeting of the Sangamon County Medical Society and the Springfield Medical Association in Springfield, March 3, Dr. Bernard Fantus and Ralph Terry, Ph.D., Chicago, discussed "Progress in Therapeutics."

At a meeting of the Chicago Society of Allergy April 18 the speakers were Drs. Samuel J. Zakon and Samuel J. Taub on "Inhalation of Horse Dander and House Dust as Etiologic Factors in Atopic Dermatitis" and Simon S. Rubin and Theodore B. Bernstein "Effect of Volume on Absorption of Antigen."

A joint meeting of the Mercer and Rock Island County Medical Societies in East Moline, March 8, was addressed by Drs. John S. Coulter, Chicago, on "Hyperpyrexia" and "Home Treatment of Chronic Arthritis with Physical Agents."

Raymond Pearl, Ph.D., professor of biology, Johns Hopkins University School of Medicine and the School of Hygiene and Public Health, Baltimore, delivered a public lecture at Thorne Hall, April 15, under the auspices of the Institute of Medicine of Chicago, "Long Life and Living."

Dr. Max Thorek addressed the Northern Tri-State Medical Association at Findlay, Ohio on April 12, on "Electrosurgical Obliteration of the Gallbladder—(a report of 373 cases)."

Dr. Leon Unger addressed the Winnebago Medical Society at Rockford, Illinois, April 12, 1938. Subject, "Differential Diagnosis and Treatment of Asthmatic Conditions."

Dr. M. Herbert Barker of Chicago, addressed the Arkansas Medical Society, at Texarkana, April 18, on "Phases of Renal Edema and Their Treatment," and on "Hypertension: Recent Advances in Therapy," on April 19.

Dr. R. K. Packard gave an address on "What Organized Medicine Has Done to the Medical Profession" before the doctors of the Eighth Councilor District at Mattoon, April 21.

Dr. Samuel Feinberg addressed the Doctors of the Marion County Medical Society at Centralia on April 21, subject, "Allergy, The Role of the General Practitioner."

Dr. Italo F. Volini delivered a lecture on Pneumonia before the Adams County Medical Society on April 11, 1938, at Quincy, Ill.

Dr. G. Henry Mundt gave a talk on "Management of Chronic Nasal Infection" before the Will-Grundy County Medical Society, April 20.

Dr. John W. Ferrin, addressed the Stephenson County Medical Society on April 21, subject, "Prostate Surgery."

Dr. M. Reese Guttman took part in the Post-Graduate Course before the Iowa State Medical Society at Rockwell City, Iowa, on April 12, 1938. He discussed "Plastic Surgery of the Head and Neck," and "Treatment of Malignant Disease in Otolaryngology."

Dr. Leon Unger addressed the Winnebago Medical Society at Rockford, Illinois, April 12, on "Differential Diagnosis and Treatment of Asthmatic Conditions."

Dr. William S. Sadler delivered an address in Detroit before the Wayne County Medical Society on "The Mental Problems of Adolescents," April 27.

Dr. Stanley Gibson gave a paper on "Management of Pneumonia in Children" before the Mississippi State Pediatric Society in connection with the Mississippi State Medical Society annual meeting in Jackson, April 18.

Dr. Frederick B. Moorehead gave an illustrated lecture on Plastic Surgery for the physicians of Wisconsin at Appleton, March 24.

Dr. William D. McNally addressed the Exchange Club of Marion, Indiana, on March 24 on "Poisons in Our Everyday Life." In the

evening he gave a talk to the Grant County Medical Society on "Diagnosis and Treatment of Some of the Common Poisons."

Dr. J. T. C. Gernon addressed the McDonough County Medical Society at Macomb, April 20, on "Medical and Surgical Consideration of Renal Calculi."

Dr. Louis D. Smith gave a talk on Syphilis at the Annual Laity Day meeting of the Rock Island County Medical Society, April 20.

Drs. James H. Bloomfield and Clifford Grulee have presented papers on "Repair of Obstetric Injuries" and "Care of the Newborn" before the doctors of Iroquois-Ford County Medical Societies on April 21.

News Notes

—The Chicago Hospital Association and the Chicago Hospital Council have been consolidated, the former to be the administrative section, according to the *Chicago Tribune*. Membership in the association was restricted largely to administrative heads of hospitals, while the council included superintendents, board presidents and chiefs of staff. The council had twenty-six member hospitals and the association twenty-three.

—There were 24,363 cases of measles reported during the first seventy-six days of 1938, according to the *Chicago Tribune* March 21, recording a new high total for the city. This total was 164 more cases than that recorded for the entire year of 1935, the previous peak year. In the same period in 1937 only 259 cases were reported, while the total for the year was only 496, it was stated. The largest number of cases reported in a single day was 743 on March 10. Since the first of the year there have been twenty-one deaths attributed to measles, while in the same period in 1935 there were nineteen.

—The appointment of a special state committee on standardizing diagnostic laboratory procedures throughout Illinois has been announced by the state department of health. Members include:

Dr. Alexander A. Day, professor of bacteriology, Northwestern University Medical School, Chicago.

Dr. Irving H. Neece, Decatur, councilor the Seventh District of the Illinois State Medical Society.

Dr. Lewis R. Hill, pathologist, Chicago.

Dr. John L. White, chief of the diagnostic laboratories, Chicago City Health Department.

Dr. Lloyd Arnold, professor bacteriology and public health, University of Illinois College of Medicine, Chicago.

Reuben Kahn, D.Sc., Ann Arbor, Mich., consultant.

The first meeting of the committee was held March 15. Its function will be to work out standards for the approval of diagnostic laboratories in the state and to act as referee in cases of dispute concerning the approval of local laboratories.

—The Laetare Medal, awarded annually by the University of Notre Dame, is to be awarded to Dr. Irvin Abell, Louisville, President-Elect of the American Medical Association. In the announcement Father John O'Hara, president of the University, said:

"The merit of Dr. Abell in his profession has been signally recognized in his election to the presidency of the American Medical Association, and his varied service to city, state and nation, as surgeon, citizen, soldier and Christian gentleman, has endeared him in the esteem of a numerous and extensive public benefited by his years of devotion to the complete welfare of his fellow men."

The Laetare Medal was originated by Notre Dame in 1883 and Dr. Abell is the fifty-sixth recipient.

Deaths

CHARLES F. BASSETT, Chicago; Chicago Homeopathic Medical College, 1879; aged 87; died, Dec. 19, 1937, in Altadena, Calif., of coronary thrombosis.

ENOS BOHNETT, Sterling, Ill.; Bennett Medical College, Chicago, 1899; aged 71; died, Dec. 13, 1937, in East Moline, of myocarditis.

ALBERT C. BROELL, Chicago; Chicago Medical College, 1886; aged 73; died, January 9, of carcinoma of the right tonsil.

BELLE C. BUCHANAN BURGESS, Chicago; Pulte Medical College, Cincinnati, 1883; Woman's Medical College of Cincinnati, 1894; aged 84; died, January 30, of cerebral hemorrhage.

WILLIAM B. CAROLUS, Sterling, Ill.; Hahnemann Medical College and Hospital, Chicago, 1888; aged 77; died, February 13, of arteriosclerosis.

JAMES H. COLEMAN, Cartersville, Ill.; University of Tennessee Medical Department, Nashville, 1882; aged 87; died, February 18, of carcinoma.

RALPH DART, Rock Island, Ill.; Rush Medical College, Chicago, 1903; a Fellow, A.M.A.; past president of the Rock Island County Medical Society; at one time health commissioner; aged 57; died suddenly, January 15, of coronary occlusion.

ELBERT EELLS DEWEY, Chicago; Chicago Medical School, 1921; member of the Illinois State Medical Society; on the staff of the West Side Hospital; aged 60; died, February 2, in Lake Bluff, Ill., of heart disease.

IRA WILSON ELLIS, Murphysboro, Ill.; Medical College of Indiana, Indianapolis, 1883; formerly mayor; aged 79; on the staff of St. Andrew's Hospital, where he died, January 20, of carcinoma of the ascending colon.

CARL JAMES EMMERLING, Pekin, Ill.; University of Illinois College of Medicine, Chicago, 1926; a Fellow, A.M.A.; on the staff of the Pekin Public Hospital; aged 37; died, January 23, in the Proctor Hospital, Peoria, of carcinoma of the lung.

CHARLES ADOLPH ERICKSON, Rockford, Ill.; Chicago College of Medicine and Surgery, 1910; aged 60; died, January 24, in St. Anthony's Hospital, of bronchopneumonia.

RAYMOND BROOKE ESSICK, Murphysboro, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1908; member of the Illinois State Medical Society; aged 52; on the staff of St. Andrew's Hospital, where he died, February 16, of cerebral hemorrhage.

HARRY BURTON FULLER, Chicago; Rush Medical College, Chicago, 1913, a Fellow, A.M.A.; member of the American Academy of Ophthalmology and Otolaryngology Fellow of the American College of Surgeons; aged 51; on the staff of the Chicago Eye, Ear, Nose and Throat Hospital, where he died, February 4, of coronary thrombosis.

GEORGE WELLINGTON GOOD, Berwyn, Ill.; Jenner Medical College, Chicago, 1908; at one time postmaster of Laverne; aged 69; died, January 10, of chronic myocarditis and nephritis.

SIMON GUREWITCH, Chicago; St. Louis College of Physicians and Surgeons, 1917; Chicago Medical School, 1922; aged 56; died, January 24, in the Michael Reese Hospital, of generalized peritonitis, secondary to cholecystitis.

ROBERT DAYTON LUSTER, Granite City, Ill.; St. Louis University School of Medicine, 1903; a Fellow, A.M.A.; past president of the Madison County Medical Society; served during the World War; formerly member of the state board of health; aged 58; on the staff of St. Elizabeth's Hospital, where he died, February 13, of ileitis.

PATRICK E. MILLS, Chicago; Northwestern University Medical School, Chicago, 1901; a Fellow, A.M.A.; aged 65; died, January 9, in the Mercy Hospital, of carcinoma of the liver.

CHARLES RAY PARKER, Chicago; Chicago College of Medicine and Surgery, 1913; aged 57; died, January 10, in St. Petersburg, Fla.

ARTHUR PARSONS, Geneseo, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1892; member of the Illinois State Medical Society; served during the World War; formerly mayor and member and president of the high school board of education; aged 69; died, January 9.

ALEXANDER BERKLEY RAFF, Chicago; Jefferson Medical College of Philadelphia, 1905; for many years member of the city board of health; at one time acting medical director of the Sanatorium of the Jewish Consumptives' Relief Society, Spivak, Colo.; aged 56; died suddenly, February 7, of coronary occlusion pneumonia.

WILLIAM D. RICHARDSON, Centralia, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1878; member of the Illinois State Medical Society; aged 86; died Suddenly, February 7, of coronary occlusion.

MARION MASTERS RICKETTS, Sadorus, Ill.; Chicago College of Medicine and Surgery, 1911; a Fellow, A.M.A.; on the staffs of the Burnham City Hospital, Champaign, and the Mercy Hospital, Urbana; aged 60; died, January 14, of pulmonary tuberculosis.

RALPH M. RUSCO, Chicago; Hahnemann Medical College and Hospital, Chicago, 1901; aged 58; died, February 3, in St. Bernard's Hospital, of intestinal obstruction and myocarditis.

PAUL SHELDON SCHOLES, Canton, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1898; served during the World War; aged 67; died, Dec. 9, 1937, of paralysis agitans.

ROBERT HENRY SHAW, Lyndon, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1901; aged 60; died, January 3, of pulmonary hemorrhage.

LOUIS JALMER SMITH, Chester, Ill.; St. Louis University School of Medicine, 1903; formerly physician to the Southern Illinois Penitentiary; aged 66; died, Dec. 1, 1937, of arteriosclerosis.

CALVIN O. SONES, Morrison, Ill.; State University of Iowa College of Medicine, Iowa City, 1886; member of the Iowa State Medical Society; aged 84; died, January 12, of coronary thrombosis.

E. JONES STROUD, Chicago; Loyola University School of Medicine, Chicago, 1929; member of the Illinois State Medical Society; on the staff of the Little Company of Mary Hospital, Evergreen Park, Ill.; aged 45; died, January 11, of lobar pneumonia.

JOHN NORTON THORPE, Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1904; a Fellow, A.M.A.; served during the World War; aged 61; on the staff of the Evangelical Hospital, where he died, February 8, of carcinoma of the stomach.

GEORGE W. VAN HORNE, Grant Park, Ill.; Chicago Medical College, 1875; aged 89; died, January 9.

HARRY ELGIN WEBSTER, Dixon, Ill.; Rush Medical College, Chicago, 1910; aged 62; died, January 29, in Hillsboro, N. D., of angina pectoris.

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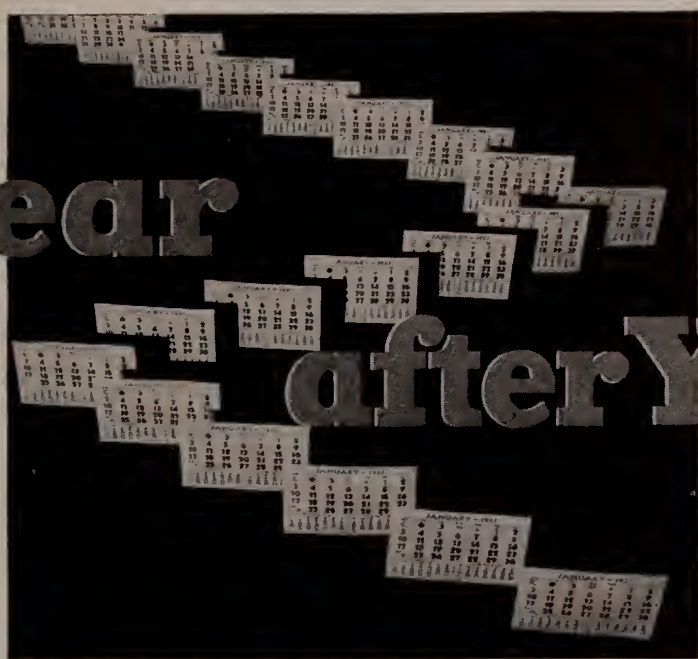
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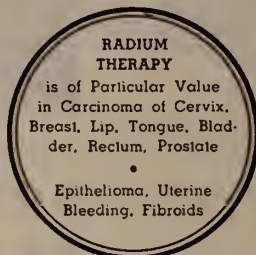
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Book Reviews

SYMPTOMS OF VISCERAL DISEASES. By Francis Marion Pottenger, M. D. Fifth Edition. With eighty-seven text illustrations and ten color plates. St. Louis. The C. V. Mosby Company, 1938, Price \$5.00.

This work is a study of a vegetative nervous system in its relationship to clinical medicine. In this edition the author has dealt with visceral pain in a separate chapter. There has also been added a chapter describing the vegetative centers in the brain and chord. There has also been much more emphasize to the endocrines in their relationship to bodily functions than in previous editions. Nearly every chapter has been partially or wholly rewritten.

HEMORRHOIDS. By Marion C. Pruitt, M. D., with 73 illustrations, including seven in color. St. Louis.

The C. V. Mosby Company, 1938. Price \$4.00.

This work attempts to answer the perplexing question as to the proper method for the treatment of hemorrhoids, and to give a valuation of the various methods advocated. It includes the details of technique of injection treatment, with a discussion of the several solutions advocated, as well as a detailed description of the accepted operation.

THE HEART IN PREGNANCY. By Julius Jensen, Assistant Professor of Clinical Medicine, Washington University. School of Medicine, St. Louis, The C. V. Mosby Company, 1938. Price \$5.50.

In this book the author has approached the subject of the Heart in Pregnancy from every practical viewpoint. He has surveyed critically the numerous physiological factors which are concerned with the increase in cardiac work during pregnancy. He has emphasized the necessity of considering the heart and circulation

(Continued on Page 34)



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Book Reviews

(Continued from Page 26)

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THE PRACTICE OF UROLOGY. By Leon Herman, B.S., M.D., Professor of Urology, University of Pennsylvania Graduate School of Medicine; Urologist to the Pennsylvania Hospital and to the Bryn Mawr Hospital; Consulting Urologist to the Methodist Episcopal and Burlington County (New Jersey) Hospitals. 923 pages with 504 illustrations. Philadelphia and London: W. B. Saunders Company, 1938. Cloth \$10.00 net.

This volume is a practical treatise on diseases of the urogenital system. It is intended particularly for the use of the general practitioner and surgeon. It deals largely with methods and procedures employed daily in diagnosis and treatment. Much care has been taken to arrange the subject matter in a readily available form. The principles of urology are discussed at a length sufficient to make the book valuable also for the student of the subject.

HERNIA, ANATOMY, ETIOLOGY, SYMPTOMS, DIAGNOSIS, DIFFERENTIAL DIAGNOSIS, PROGNOSIS AND THE OPERATIVE AND INJECTION TREATMENT. By Leigh F. Watson, M. D. Second Edition. St. Louis. The C. V. Mosby Company, 1938. Price \$7.50.

This work has been much revised to meet the mod-

ern demand for a method of treatment of certain types of reduceable hernia, by many industrial corporations, insurance companies and state industrial commissions.

Much of the historical material has been omitted from the text, and the description of many operations for hernia have been deleted because these procedures are not now in general use.

The medico-legal chapter has been rewritten to embrace the latest opinions of the insurance carriers and the rulings of the State Industrial Commissions.

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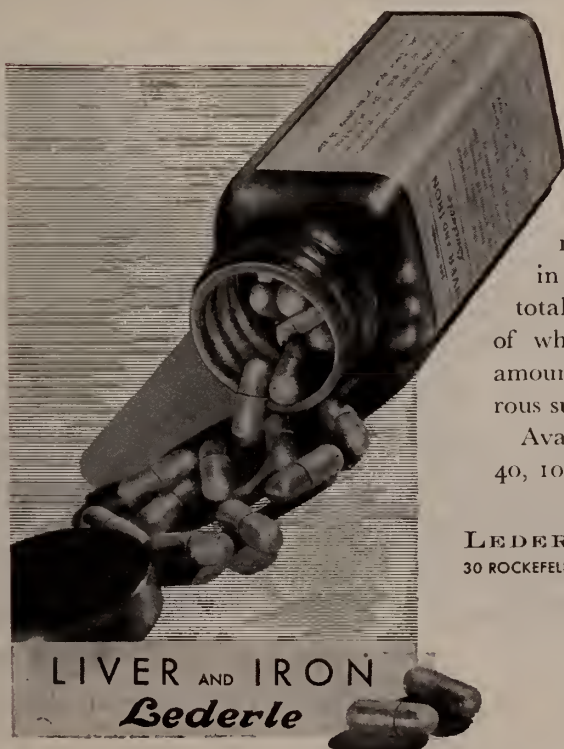
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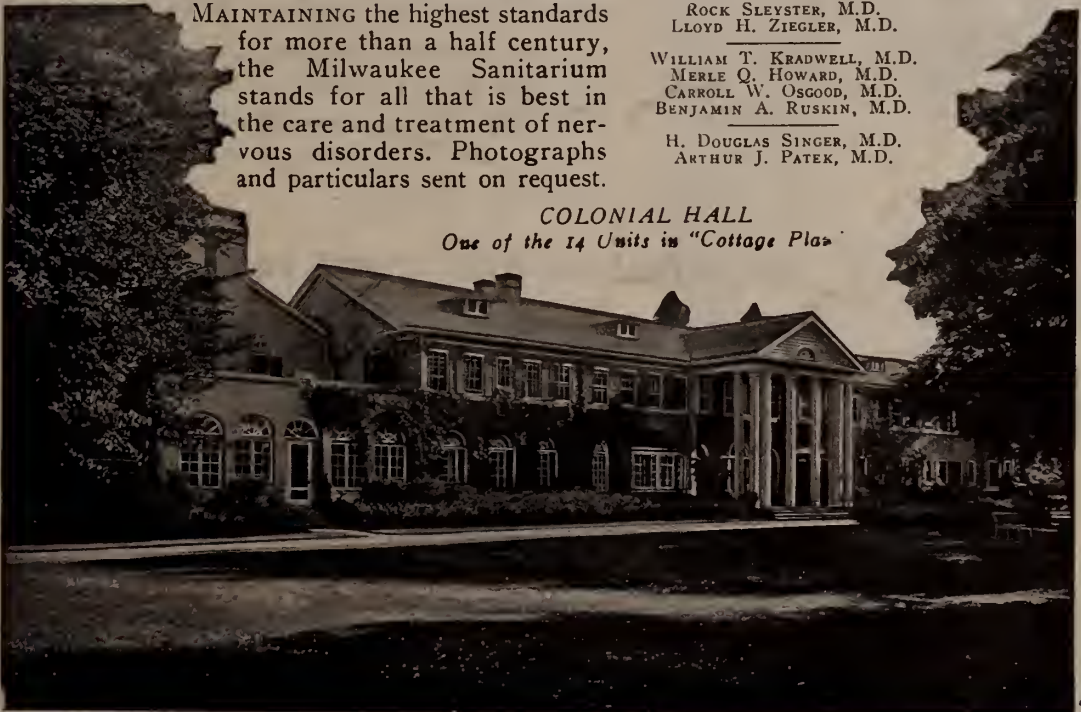
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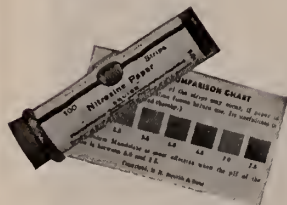
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The manufacture of tinplate and "sanitary" cans is described elsewhere (1).

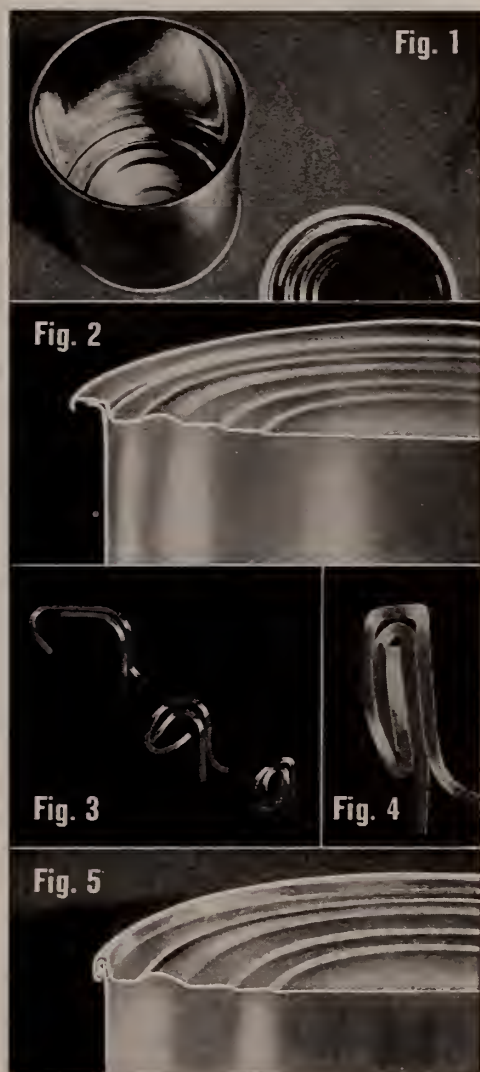
The open cans are received at the cannery in paper cartons or in washed paper-lined box cars, together with the covers which are contained in fiber shipping tubes. Figure 1 shows a can and end ready for use.

In modern canning practice, the cans are first conveyed by automatic runways to can washers, and thence to the filling tables or fillers where the correct amount of properly prepared raw food is put into the cans. The covers or "ends" are placed in the automatic sealing or "closing" machine to which the open can containing the food is mechanically conveyed. In this machine the ends are "double-seamed" onto the can. This operation is portrayed by the accompanying cross-sectional pictures.

In Figure 2 is shown the relation of can to cover before the sealing operation is started; note the relative position of the "curl" on the cover and the "flange" on the can. In this curl, the can manufacturer has placed a gasket or "compound," usually containing rubber. Figure 3 is a series of photographs illustrating the sealing operation in which the curl and flange are first rolled into position and then the layers of metal flattened together to form the final "double-seam" in Figure 4. The rubber compound originally present on the cover supplies the binding material between the layers of metal necessary to insure a permanent or hermetic seal on the container. Figure 5 illustrates in cross-section a closed sanitary can as it comes to the consumer.

In the past twenty-five years great progress has been made in the development of tinplate, compounds and automatic sealing machines. Collectively, these developments enable present-day canners to impose a permanent seal on the cans containing their products more easily and rapidly than ever before in the history of canning.

(1) The Story of the Tin Can, American Can Company, New York, 1935



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REFERENCES

While making no therapeutic claims, we offer the following references to the literature for the attention of physicians.

1. "Treatment of Human Pellagra with Nicotinic Acid."—Fouts, Holmes, Lepovsky and Jukes, *Proc. Soc. Exper. Biol. & Med.* 37:405 (Nov.) 1937.
2. "Relation of Nicotinic Acid and Nicotinic Acid Amide to 'Canine Blacktongue.'"—Elvehjem, Madden, Strong and Wooley, *J. Amer. Chem. Soc.* 59:1767 (Sept.) 1937.
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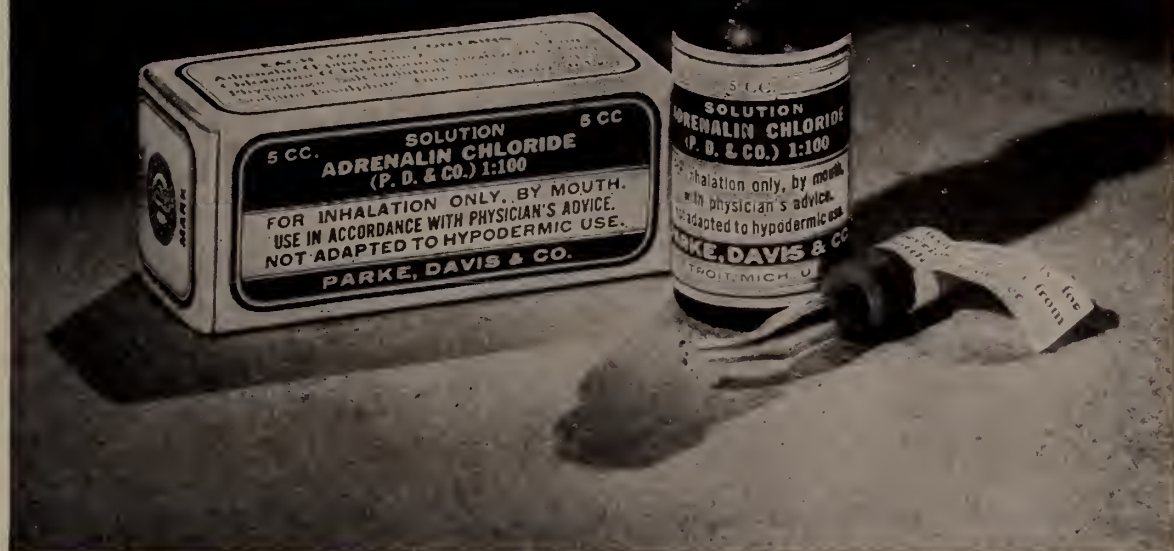
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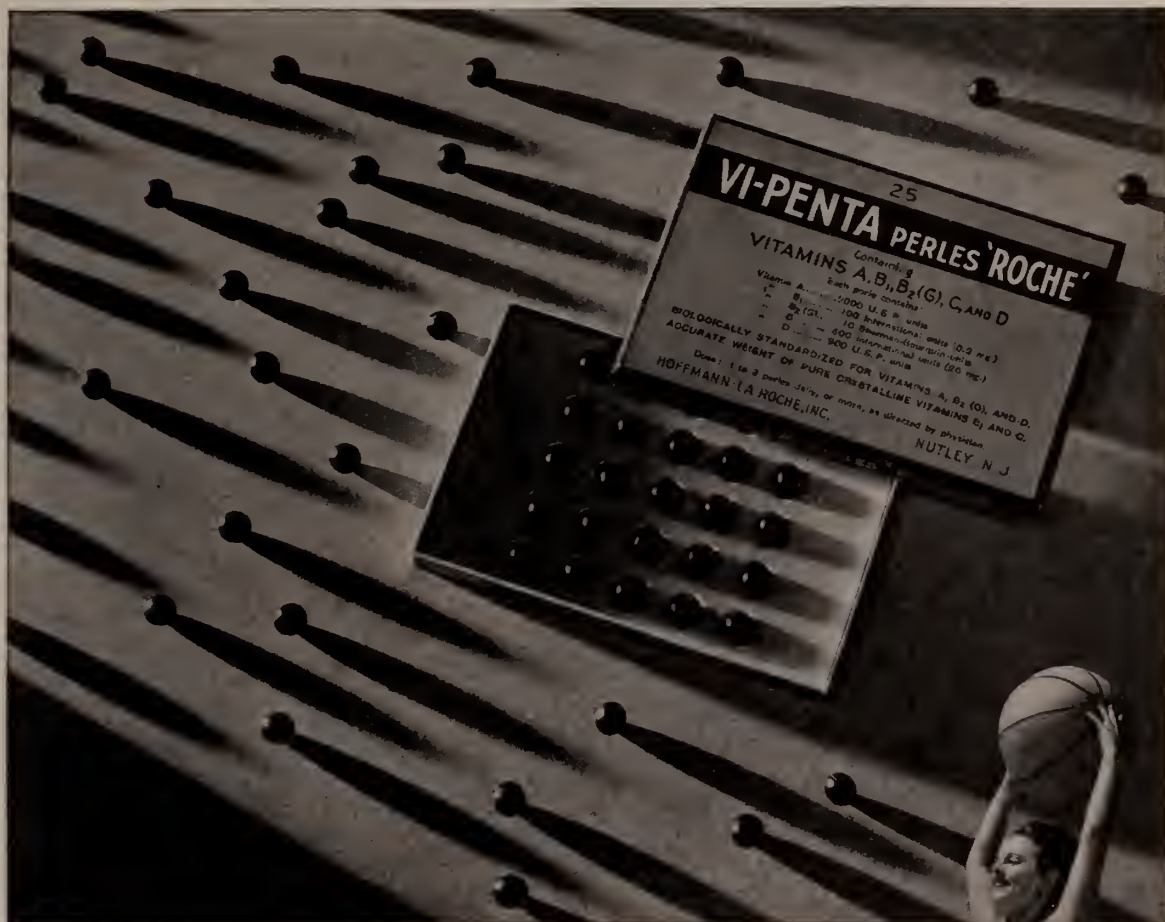
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ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF
THE ILLINOIS STATE MEDICAL SOCIETY

VOL. 73

OAK PARK, ILL., JUNE, 1938

No. 6

ILLINOIS MEDICAL JOURNAL

Published monthly by the Illinois State Medical Society under the direction of the Publication Committee of the Council.

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Subscription price of this JOURNAL to persons not members of the Illinois State Medical Society is \$3.00 per year, in advance, postage prepaid, for the United States, Cuba, Porto Rico, Philippine Islands, Hawaiian Islands and Mexico. \$4.00 per year for all foreign countries included in the postal union. Canada, \$5.50. Single current copies, 50 cents.

Editorials

POLIOMYELITIS SEASON IS NOW UPON US

The season of poliomyelitis, in all ruthlessness and fury, is now upon us. According to the twentieth weekly bulletin of the Illinois Department of Public Health, the prevalence of poliomyelitis (infantile paralysis) has run a course almost exactly parallel to that of the year 1937, when later in the season a sharp epidemic wave developed. At this writing no one can foretell whether the disease will reach epidemic proportions in the year 1938. In all probability the prevalence of the disease will increase considerably before frost appears in the Autumn. Without exception, over a period of years, the seasonal incidence of Poliomyelitis in this State has reached a peak during the period of August-October. According to the health department bulletin more than 200 cases have been reported in each year since 1929 and the trend since 1933 has been upward. Our latest source of information states that to date this year 21 cases have been reported against 23 in the same period in 1937.

Based on the history so far available the Director of Health suggests that a minimum of 100 to 200 cases of poliomyelitis will occur in Illinois between now and December with the likelihood a gradually increasing prevalence until September or October.

A large majority of authorities who have done research work in infantile paralysis agree that the atrium of infection is through the olfactory area of the nose, along the olfactory nerves and the central nervous system.

The early manifestations of the disease are fever, headache, irritability, perhaps vomiting, in all likelihood tremor in the hands and in all cases a tender rigid spine, which will make it impossible for the child to touch his chin with his knee.

A year ago much was said about applying zinc sulphate solution to the human olfactory area

with the idea of preventing poliomyelitis. The work of Tisdall, Brown and their coworkers during the poliomyelitis epidemic in Toronto in the Fall of 1937 on the clinical application of zinc sulphate as a means of prophylaxis will lead to the conclusion that there is no evidence of protective value of a nasal spray of one per cent zinc sulphate, even though applied by otolaryngologists.

Park and his colleagues have demonstrated by carefully controlled studies that convalescent serum possesses no value in prophylaxis or in the therapy of infantile paralysis. Other clinicians feel that so far the most potent remedy seems to lie in the use of convalescent serum.

Since no positive method in preventing the disease has developed, efforts at control will be most fruitful if concentrated on preventing permanent physical disability. Permanent crippling is the chief risk of the victims of poliomyelitis.

This affliction like smallpox and syphilis demands definite prophylactic rather than curative measures. Since isolation is one of the greatest factors in checking the spread of the disease, its possibility should be at the forefront of every physician's suspicions in cases where even one of the possible symptoms of infantile paralysis appears. There is no immunity age for the scourge and this too, is an item demanding recognition.

Alertness by physicians in recognizing early symptoms and signs in ill children during the poliomyelitis season may lead to preventing paralysis in a large percentage of cases if patients are promptly put to complete rest under the supervision of a competent physician. All authorities agree that complete rest in bed from the very onset of symptoms is the greatest factor in preventing paralysis. Absolute rest during the pre-paralytic or acute stage is regarded as so important that the moving of the patient from bed to bed or from home to hospital should be prohibited.

It is regrettable that so far the science of medicine has so little to offer in the prevention or in the treatment of this dread disease.

ILLINOIS ASSOCIATION OF MEDICAL JOURNALS

An early meeting of the new Illinois Association of Medical Journals which organized on May 17, 1938, during the 98th convention of the Illinois State Medical Society at Springfield,

will probably be held in the state capitol again.

Four regional or county medical publications were active in the founding of the first statewide association of its kind in the world so far as known. Dr. Kenneth E. Schnepf, M. D., 614 East Capitol Avenue, Springfield, will serve as president during the ensuing year and Dr. George W. Dryer, M. D., Room 735-A, Fifth Avenue Building, Moline, will be secretary-treasurer.

The charter members to date are *Sangamon County Medical Bulletin*, *Adams County Medical Bulletin*, *Peoria Medical News*, and *Rock Island County Medical News*. There are 16 known regional and city journals in Illinois although LaSalle county has an annual publication.

It will be the constant aim of the new association to eliminate overlapping of circulation to doctors and hospitals in contiguous territory within the state, giving the commercial firms bona fide coverage for the first time, and also to exchange editorial, make-up and advertising ideas for the benefit of organized medicine.

All existing medical publications are urged to open correspondence with the offices to determine the possibility of getting more members before the charter is closed.

Dr. Schnepf was temporary chairman and Dr. Emil Levitin, editor of the *Peoria Medical News*, temporary secretary, at the meeting. No fees will be charged to members for the present.

IS TOBACCO EVER THE INCITING CAUSATIVE FACTOR OF DISEASE?

A campaign of education against the excessive use of tobacco would seem to be obligatory on the medical profession. Correlation of important and patient research throughout the world indicates that nicotine is not only an insidious, certain and progressive poison both because of its inescapable habit forming character, but also because there is far more than presumptive evidence that excessive smokers are both likely candidates for gastrointestinal disorders and marked changes in cardiac activity but that smoking exerts a very great influence in causing associated syndromes of nervous, mental and circulatory diseases.

The campaign of education of course will be hampered by the fact that the tobacco industry is one of the largest and richest in the world and

is both able and willing to spend lavishly in order to retain such preeminence. The medical profession in combating this ever growing evil will find itself in the same bog that confronts every attack upon a pleasant vice that on the surface does not indicate the menace it contains against public health and welfare. One of the most quoted of modern philosophers has written of the tobacco solace: "A woman is only a woman but a good cigar is a smoke." Medicine is not attempting to discredit the tobacco industry per se, for the industry from the farmer to the merchant and the ultimate consumer is a valuable unit in national prosperity, but—and to a far higher degree, so is the public health.

Nicotine stands unchallenged as one of the most deadly poisons known to science yet more than one hundred and fifty-three billion cigarettes were manufactured in the United States in 1936, and the consumption of tobacco is growing every year. Eight million pounds of tobacco leaf was consumed in 1900, and three hundred and seventy-seven million pounds in 1934. From 66 to 80 per cent of the population smoke. There are at present more than 350,000 people confined in our insane asylum, and the annual increase appears to be about 20 per cent. This is a discouraging aspect of the question of human betterment. Manufacturers of cigarettes spend millions of dollars annually in the apparently easy task of persuading nearly every boy and girl in the country to smoke. Alluring and carefully devised advertisements appear to drive home misleading and false claims that cigaret smoking is an almost universal panacea for many problems pertaining to contentment and well-being. Bill-boards, the press and the radio unceasingly strive to teach the entire nation that the possession of a sound mind in a sound body is, to a marked extent, dependable upon smoking. Our youth are constantly reminded that cigarettes are prerequisites of health and happiness, and that smoking is a necessary accomplishment when one seeks to associate familiarly with the cultured and higher strata of society, and to acquire such poise and urbanity.

Complacency and a feeling that all is well should give way to deep speculation and grave concern as to what will be the mental and physical status of future generations. If physicians are accepted as guardians of health it would appear to be a professional duty to disseminate

concrete facts relating to this important subject. Physicians should sound warning notes against the harm and potency of nicotine, with its long chain of potentialities and dangerous metabolic disturbance. In an evaluation of the potency of nicotine and the injurious effects produced by excessive smoking, assiduous attention should be directed toward the fact that when smoking stops, an improvement follows that is both subjective and objective, and there is a marked amelioration of symptoms.

Earnest and painstaking scientists and their co-workers present a great volume of research that should be considered as equivocal evidence that claims made for the mildness and innocuousness of cigarettes and cigars are misleading and fallacious. Tobacco interests use every means at their command to convince the careless and impressionable public that tobacco is not only harmless but, an important factor in bodily economy. Advertisements ask us to believe that smoking cures frayed nerves, aids digestion in no uncertain manner, and serves as an excellent weight reducer. One tobacco company admits that cigarettes may be denicotinized, but that when this is done the appeal and "character" are lost, so despite the fact that nicotine is twice as deadly as strychnine and that it ranks second in point of lethal dose to aconitine it is not removed. Throat irritation, one manufacturer says, is not caused by tobacco, nicotine or paper, but it is due to glycerin placed in the tobacco to hold moisture. This, we are informed also by manufacturers has been overcome by using diethylene glycol instead of glycerin. Drs. Canon and Geiling¹ have shown that nicotine is a cumulative poison, resulting in hydropic degeneration of the liver and kidneys. Its toxicity is undisputed.

A cigarette contains about one gram of tobacco with an average nicotine content of 2.52 per cent. Similar to tarry oil this rank smelling liquid alkaloid enters the circulation rapidly during inhalation. Approximately 2.0 mg. of this poison is taken into the circulation when about two-thirds of a cigarette is smoked and inhaled in a period of five minutes. Numerous investigators have found that when the cigarette is tightly packed and when it is smoked rapidly, nicotine and other irritating products are increased in amount, especially when the tobacco contains moisture. Tarry oil that collects in the

stump of a cigar or cigarette, or in the bowl and stems of a pipe contains nicotine and pyridine bases. Pyridine causes irritation of mucous membranes. Long ago scientists found that when a drop of nicotine is placed on the tongue of a cat, dog or other small animals that death follows in a few minutes.

Secondary complications, such as a cough and a husky or hoarse voice, are observed in many smokers. Others complain of dryness and irritation in the nose and throat. Examination of the nose frequently reveals congestion of the mucous membrane, and the conjunctiva appears red and congested in many other smokers. Some are disoriented and many are restless and miserable unless they smoke almost incessantly. Who has not seen smokers hurriedly light a cigarette, and then inhale deeply when the fast approaching street car or other circumstances make it certain that the cigarette must be thrown away the next moment? Stimulation of the entire nervous system followed by depression is the characteristic action of nicotine. Other products of the combustion of tobacco are carbon dioxide, carbon monoxide, ammonia and aldehydes such as formaldehyde, tars, *formic acid and furfural*. Scientists vary in their opinions pertaining to which products of combustion produce the greatest irritation of mucous membranes, but some believe that formic acid, formaldehyde and acrolein are the principal irritants. Ammonia irritates the conjunctiva of some smokers. The last third of the cigar or cigarette is said to contain more nicotine and other harmful substances when it is smoked.

Nearly all who have made scientific investigations of this subject are convinced that a smoker's saliva causes more or less discomfort and irritation of the stomach. A glance at literature reveals that smokers have a higher incidence of cancer of the lip, tongue, mouth, esophagus, larynx and lungs. Heartburn is one of the chief complaints of smokers who have functional gastric disturbances. Some observers are of the opinion that smoking is an exciting factor in thromboangiitis obliterans, and that there is an increase in blood pressure averaging between 12 to 15 mm. systolic and 10 to 14 mm. diastolic. Changes in pulse rate and blood pressures produced by nicotine are the result of its stimulation or paralysis of the vagus and sympathetic nerves or their ganglia. It has also been ob-

served that the blood flow in the nail fold capillaries is retarded and occasionally completely stopped. In some cases those with Buerger's disease complain of burning and stinging sensations accompanied by pain or numbness in the feet after smoking a cigarette. They may also complain of headache or fullness in the head, restlessness, insomnia, unsteadiness of gait and dizziness.

Palpitation, breathlessness on slight exertion and precordial pain are other symptoms caused by smoking, together with marked changes in cardiac activity such as auricular and ventricular arrhythmias. Amblyopia from excessive smoking is regarded as a common observation, and there is significant information pointing to the fact that the delicate mechanism of the ear is frequently stimulated adversely. There is also conclusive evidence that in such pathologic processes as impairment of the peripheral circulation and gastric and duodenal ulcers, tobacco is definitely contraindicated. In many instances leukoplakia buccalis follows as a consequence of smoking to excess. Alvarez² found that "nicotine" even in moderate concentrations, seems usually to paralyze some part of the nervous mechanism of the bowel. . . In massive doses it is probably a general protoplasmic poison which can injure muscle fibre."

Experiments of Mulinos and Osborne³ demonstrated that when from one to five per cent of glycerine was added to cigarette tobacco the smoke became more irritating to the tongue, pharynx and larynx, but irritation and coughing decreased when the same amounts of diethylene glycol were added. With the results of these investigations before them and accepting the fact that tobacco smoke is an irritant known to stimulate salivary flow, Holck and Carlson⁴ undertook to measure the salivary responses of 26 men and two women. They sought to determine whether the flow of saliva decreased when diethylene glycol was added to cigarette tobacco, inasmuch as other workers reported that it lessened the irritative properties. Thirteen one-hour tests were conducted upon each of 28 subjects and saliva was removed from the mouth by a Dewitt dental saliva ejector, while suction was provided by a water pump. Three kinds of cigarettes were used and while all contained the same kind of tobacco one contained tobacco alone, a second tobacco and glycerin, and the third cig-

arette contained tobacco and diethylene glycol. The results of this experiment indicated that one cigarette was no more irritating than another, and that the flow of saliva increased about 50 per cent. In a number of instances more saliva was collected from subjects who smoked cigarettes containing tobacco alone, while in eight persons tobacco containing diethylene glycol evoked the greatest response. It is the opinion of these scientists that "a method for determining the irritating properties of cigarettes which relies solely upon the opinions of ordinary smokers cannot be considered reliable."

There is a constantly increasing volume of literature in which we find the observations of workers who have studied electrocardiographic changes produced by injecting nicotine into dogs and rabbits. Moreover, numerous writers present the results of their work in determining the effect of tobacco smoke on the human heart by taking electrocardiograms. Graybiel⁵ and his associates conducted a series of experiments on 45 persons of different ages and habits that were carried out by methods similar to those described by other writers. Smoke of cigarettes was inhaled by the subjects until toxic symptoms appeared or until the cigarettes were consumed. Unusual signs and symptoms were recorded and at the same time electrocardiograms were taken frequently, while blood pressure and pulse rate determinations were carefully studied. Twenty-eight complained of cerebral, cardiac, or gastrointestinal symptoms during the tests. Thirty-nine showed an increase in heart rate which averaged 13 a minute, four a decrease which averaged 15, while in two no change was observed. Arterial blood pressure increased 13 mm. Hg systolic and seven mm. diastolic in 24 of 31 tested. In six there was an average decrease of 13 mm. systolic and three mm. diastolic; in one no change was noted. "The commonest electrocardiographic change was a decrease of from 1 to 4.5 mm. in amplitude of the T-waves in Lead I or II which was observed in 15 instances." The observations of these investigators also indicate that attacks of angina pectoris follow smoking in patients with a small coronary reserve. Other workers have shown that it occurs more frequently among non-smokers, and they conclude that smoking is not primarily responsible for that disease.

In the summary of Thienes and Butt these authors state: "1. That experimental and clinical studies supporting the thesis that chronic tobacco or nicotine poisoning leads to degeneration of circulatory organs, are poorly controlled and therefore of doubtful value. 2. Experiments of the present authors show greater vascular degeneration in control animals than in animals chronically poisoned with nicotine. 3. It is suggested that acute peripheral vasoconstriction associated with smoking may exaggerate the effect of existing vascular disease upon the nutrition of the extremities. 4. Smoking probably does not produce organic disease of the heart. They feel that little weight can be given to the uncontrolled experiments of the early part of this century, and they concur in the opinion of Harkavy and Sulzberger neither of whom believed they had proven a relationship between tobacco and vascular disease, but they considered their data to be suggestive."

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RADIO ARTIST BROADCASTS OPINION ON MATTERS PERTAINING TO MEDICAL CARE

One of the reasons that the iniquitous Shepard-Towner bill was passed was because the general public did not know what it was all about. Socialized medicine however is being well explained on all sides to a public that is asked only to "lend its ears."

Even the radio artists are getting justifiably excited about the situation and from the popular singer who gave us "When the Moon Comes Over the Mountain," Kate Smith listeners in from coast to coast heard April 25, 1938, the lady's own ideas on the topic, "Doctors and Doctors Alone Should Decide the Question of Socialized Medicine."

In case, doctor, *you* missed hearing her, let us present this varbatim report, transcribed

from Station WABC for the Public Relations Bureau of the Medical Society of the State of New York by *Radio Reports, Inc.*, of New York City.

"There are so many reforms these days that we can hardly keep track of them. Did you know that one of these reforms affects your doctor and is called 'socialized medicine'? Such a plan would mean simply this. The medical colleges would represent a sort of doctor factory. And instead of going into private practice after serving as interne, doctors would join the staff of large hospitals and clinics. People in need of treatment would apply to these centers, and the doctors on call for cases requiring home treatment would be assigned by the central bureau in each city or town. The group which is in favor of this movement believes that the treatment of the sick should be a direct responsibility of the government, the charges for the services of skilled medical men should be paid for in taxes, so that everybody would pay a little and all those in need of doctors would get the benefit. In much the same way that education is at present administered, so would socialized medicine operate.

"I thought I'd like to talk it over with a man who is in a position to enlighten us a little bit, so I asked Dr. Irvin Abell, president-elect of the American Medical Association, about it. Speaking for the association, Dr. Abell said very definitely that the organized medical profession is opposed to the socialization of medicine for many reasons. Among them he cites these: in nearly all systems of socialized, or state-managed medicine, no provision is made for the care of the poor, and limited provision, if any is made for the care of the unemployed. Little or nothing is done to develop or provide preventive services and the tremendous cost of administration is added to the actual cost of medical service. Since the patient under this system cannot choose his doctor, it is difficult to preserve the confidential relationship so necessary between the doctor and the patient. The tendency in such a system is toward superficial diagnosis and mechanical treatment. Physicians are compelled to comply with regulations which take a lot of time and effort which should be devoted to the proper care of patients. Placing physicians under the control of officers of the state, in whose selection the doctors have no

voice, and under which rewards for the work will not be based on the quality of service, will produce conditions that will not be likely to attract desirable and well qualified men and women into the medical profession. This would result in lowering the high standard of medical service in this country. That is what Dr. Abell has to say.

"Of course I'm not qualified to say which is the better plan, but I do know this. We had a family doctor at home and we all loved him very much. A friendly man, who came in and called us all by our first names and chatted with us about the little things which were going on in our community. He represented something more than a doctor to us. We had faith in him, and I, for one, would be sort of sorry to see socialized medicine take his place. Since these family doctors have justified the faith that we've always put in them, I feel it is these doctors and these doctors alone, who should decide whether the way we've been doing in the past is the best way to operate, or whether the plan should be changed to this latest reform idea of socialized medicine. We've trusted our doctors with some pretty important decisions for many, many years, and I think we can trust them with this one. They should know the answer better than we do, and their answer should be final, legislators and laymen to the contrary."

A SURVEY OF GROUP HOSPITALIZATION PLANS

The Bureau of Medical Economics of the American Medical Association found from its survey of group hospitalization plans that there were 172 such plans located.

In this list, some:

1. 56 plans were in operation.
2. 34 plans were still in the promotional stage.
3. 82 plans had either consolidated with other plans, or had been discontinued or were otherwise inactive.

Without considering the 22 plans formed in 1936 because, as the report says, in all due honesty, they earn the gift of "the benefit of the doubt," the result is still rather disconcerting to those who find in group hospitalization another medical economics panacea. For accord-



Samuel E. Munson, M. D.
President, Illinois State Medical Society, 1938-1939

ing to the figures quoted above out of 150 group hospitalization plans promoted in the period between 1918 and 1935, fifty-one or more than a third by a slight margin are in operation; 11 or a fraction more than a tenth are still being proposed and 55 or more than half are inactive. The A. M. A. bureau found that many of the discontinued plans were reorganized as insurance companies. The profession may be excused for thinking that possibly that is all that they were ever intended to be, and that their medical efficiency lay highest in the brain of some actuary. At any rate it is as much out of character for the profession of medicine to engage in the business of insurance as it is for the insurance business to attempt the practice of medicine. Some day there may evolve a perfect group hospitalization plan that will cause no ruckus with the law of ethics nor the law of averages. In the meantime while "trial by error" seems to be the only way in which really to throw light upon the group hospitalization plans touted everywhere, it would appear that medical men should be decidedly chary of either subscription to or participation in any such plans that present too glowing a face. There is a wise old adage that most of us learned in the days of high school Greek and Latin, though it is so thoroughly translated into every language that it is a familiar phrase to others than the academically trained, and it is:

"Beware of Greeks Bearing Gifts."

The average group hospitalization plan, no matter how legitimately evoked, needs careful analysis, if not actual pasteurization.

THE 1938 ANNUAL MEETING

The 1938 annual meeting of the Illinois State Medical Society held in Springfield on May 17, 18, 19, was one of the best attended and best arranged meetings in the history of the society. Although the weather was threatening each day, and many were prevented from attending the meeting on account of storms, the attendance throughout the meeting will compare favorably with any of the previous downstate meetings.

The scientific programs were carefully arranged and appealed to the many members and guests present, and all were well attended. A very large audience heard the Oration in Medicine delivered by George Draper of New York

City, and the Oration in Surgery presented by Irvin Abell of Louisville. More general sessions were arranged for the meeting this year and the arrangement proved highly satisfactory to all present.

The Hall of Health, where dozens of health exhibits were displayed for the public during the entire week, was visited by thousands of people who were interested in the fine array of health information that was made available for them. No admission charge was made and attendants were ever anxious to give all possible information to the many people desiring it.

Once more at the annual meeting many elaborate scientific exhibits for the medical profession were shown and each year these exhibits are becoming more popular with the members of the State Medical Society. These exhibits were carefully selected by the Committee on Scientific Exhibits and each of them represented a vast amount of work on the part of those who prepared them. The awards presented by the Society for the best exhibits in each of the three classes appear in this issue of the ILLINOIS MEDICAL JOURNAL.

The following officers, Councilors, and Committees were elected at the second meeting of the House of Delegates:

President-Elect James H. Hutton, Chicago
First Vice President..... Harry Otten, Springfield
Second Vice President..... C. A. Earle, Des Plaines
Secretary Harold M. Camp, Monmouth
Treasurer A. J. Markley, Garden Prairie
Councilor for the First District.. E. H. Weld, Rockford
Councilor for the 2nd District... E. C. Cook, Mendota
Councilor for the 3rd District.. P. E. Hopkins, Chicago
Councilor for the 11th District.....

..... E. S. Hamilton, Kankakee
Delegates to American Medical Association (for 2 years)—Charles J. Whalen, Chicago; G. Henry Mundt, Chicago; J. J. Pflock, Chicago; R. K. Packard, Chicago; E. S. Hamilton, Kankakee.

Alternate Delegates to American Medical Association—M. I. Kaplan, Chicago; G. L. Kaufmann, Chicago; H. E. Quinn, Chicago; C. E. Humiston, Chicago; L. O. Frech, Decatur.

STANDING COMMITTEES

Public Relations—W. S. Bougher, Chicago; Fred H. Muller, Chicago; S. W. Lane, Kankakee.

Medical Legislation—John R. Neal, Springfield; M. J. Hubeny, Chicago; Mather Pfeifferberger, Alton.

Medico-Legal (2 for three years)—J. R. Ballinger, Chicago; C. U. Collins, Peoria.

Medical Education and Hospitals—N. S. Davis, III, Chicago; W. R. Marshall, Clinton; H. O. Munson, Rushville.

Relations to Public Health Administration—E. H. Blair, Chicago; Andrew Gansevoort, Chicago; Thomas Meany, Chicago; C. G. Pool, Compton; L. O. Frech, Decatur.

The total registration of physicians at the meeting was 1,335, while the total registration was approximately 1,600.

Rockford was selected for the 1939 annual meeting subject to the approval of the Council after an investigation is made to be sure that adequate facilities are available. An announcement from the Council will be made in the ILLINOIS MEDICAL JOURNAL in July relative to the final decision.

Once more Sangamon County Medical Society and the many cooperating organizations in Springfield have proven conclusively that they are able to make all necessary local arrangements for a successful annual meeting.

AWARDS FOR BEST EXHIBITS AT THE 1938 ANNUAL MEETING

CLASS I

Silver Medal

"Experimental Intersexuality in Rats." R. R. Greene, M. W. Burrill, A. C. Ivy, Northwestern University College of Medicine, Chicago.

Bronze Medal

"What is Normal Blood Pressure?" Samuel C. Robinson and Marshall Bruer, Chicago.

Certificates of Merit

"Production of Genital Growth in the Male." W. O. Thompson and N. J. Heckel, Rush Medical College and Prysbyterian Hospital, Chicago.

"Experimental Production of Homogeneous Osteoporosis in Dogs." R. A. Bussabarger, Smith Freeman, A. C. Ivy, Northwestern University College of Medicine, Chicago.

"Catgut Absorption—Experimental and Clinical Study." Hilger Perry Jenkins, University of Chicago Department of Surgery, Chicago.

CLASS 2

Silver Medal

"Diagnosis and Treatment of Pneumonia." Medical Department, Northwestern University College of Medicine.

Bronze Medal

"Puerperal Sepsis." Department of Public Health, State of Illinois, Henry Horner, Governor; Frederick H. Falls, Maternal and Infant Hygiene, and the University of Illinois College of Medicine, Department of Obstetrics and Gynecology, Chicago.

Certificate of Merit

"Bronchography in Bronchial Asthma"—Emmet F. Pearson, Springfield.

Class 3

Hall of Health

Silver Medal

"Foreign Bodies in Lung and Oesophagus." Department of Bronchoscopy, University of Illinois College of Medicine.

Bronze Medal

"Public Health Service and Preventive Medicine." State Department of Public Health, A. C. Baxter, Acting Director, Springfield.

Certificates of Merit

"Recovery" and "Trachoma Clinics." Department of Public Welfare, State of Illinois.

"The Heart and Lungs Through Forty Centuries." Northwestern University School of Medicine, Chicago.

"Progress of Scientific Medicine in a Small City." Pinckneyville Junior and Senior High Schools.

THEY CAN DO LIKE THEIR DADDIES DID—HIRE THE DOCTOR OF THEIR CHOICE—SOCIAL UPLIFT IS STOOGES ACT

Because of the excellent method of presentation by one of the most virile of the lay writers of the day, it is with pleasure that "Social Uplift Is a Stooges Act" is here reprinted in its entirety from the *Chicago Daily News* of Friday, May 13, 1938. Harper Leech, the author, is one of the best known, most widely read and most generously quoted economists and editorial writers of the day.

According to one of the endowed pinko weeklies Dr. Morris Fishbein is one of the principal sachems of a medical Tammany Hall, the American Medical Association. Doc Fishbein in the regalia of a Tammany sachem would add something to the local color of Chicago's near North Side, but it took Greenwich Villagers to think that one up. The headquarters of the association has little about it to suggest a political headquarters.

No one ever got a drink there even under the 18th, when doctors were a privileged class, assured of a minimum income by their Volstead law permits to write prescriptions for spiritus frumenti.

I guess that Fishbein can take care of himself in any battle with the pinkos and I know nothing of the merits of the controversy between orthodox medical ethics and "social medicine." But I can't help noting certain implications of a paragraph in the pinko punko publication.

It says: "A special committee of the New

York State Medical Society has formulated a program calling upon the government to provide medical care and health insurance for the indigent and lower income groups." There we have the same old line—"program," "government aid" and "groups." Take those cliches out of uplift patter and New Deal propaganda and what would be left?

Back of the words and phrases lie certain assumptions that spell evil, not good, for the poor. While folks are poor, no red-blooded human being can object to helping them, and I can't get excited about whether the necessary help is to be paid for by the government or by private citizens.

What annoys me is the patronizing unctuousness and sanctimony that pervades all this alleged philanthropy and uplift, I don't care whether it is part of a fireside chat, a paragraph in the report of a tax-dodging foundation left by some financial buccaneer, or one of Mme. Perkins' communiques.

Having been born in a county where there was nobody worth more than \$20,000 and no propertyless people, except a few half-wits at the county farm, I suppose I am a hopeless anachronism, a hick who has never yet brushed all the cockleburs off his pants. But neither have I ever got around to the idea that there is any reason for people to remain poor in America or that it is necessary to have static social "groups."

* * *

When I hear people going on about their great love of the poor, I can't help recalling old Victor Hugo's crack that the only good the rich could do the poor would be to get off their backs. And today I think that goes quite as aptly for politicians, philanthropists, social workers and the whole kit and kaboodle of the "social minded."

If this country would go back to real Americanism, the most radical social creed on earth as exemplified by Jefferson, Jackson and their kind, we would have no need for "social medicine," "social security," or any other of the "social" abominations of the New Slavery that Herbert Spencer warned us against more than 50 years ago.

The people of the great cities of America today, of all the races and creeds, are just as capable of self-help and self-support as were the men and women who started this country. I say

that after having looked 'em over in plenty of cities. Nor do they want to be nursed, coddled and patronized.

Back of the social workers, the foundationeers, the professional philanthropists and all who have developed into beneficiaries of a vested interest in poverty and dependence are the grab-it-allers whose vested interests and special privileges depend upon the limitation of production and the curtailment of opportunity and competition. Today the cost of relief and the social uplift are the price paid for monopoly. The uplift is a stooge act.

Open the throttle of the American economic engine and the people of America will have no need for "social medicine." They can do like their daddies did—hire the doctor of their choice.

MENTAL SYMPTOMS ASSOCIATED WITH BRAIN TUMOR: STUDY OF 530 VERIFIED CASES

Moses Keschner, Morris B. Bender and Israel Strauss, New York (*Journal A. M. A.*, March 5, 1938), studied a series of 530 patients with cerebral tumor in order to determine the frequency of occurrence, nature and localizing value of abnormal mental reactions during the course of the disease. There are no mental symptoms that are specific for cerebral tumor. Mental symptoms are almost twice as frequent in patients with supratentorial as in those with infratentorial tumor of the brain. Disturbances in memory are predominantly more frequent in individuals with supratentorial tumor than in those with infratentorial tumor. Complex visual and auditory hallucinations are more frequent in patients with tumor of the temporal lobe. Crude auditory hallucinations are heard by the patients most commonly on the side of the tumor, whether the tumor is located above or below the tentorium. Localized tactile hallucinations indicate that the parietal lobe opposite to the side of the hallucination is the seat of the tumor. The most severe and most varied type of psychic disturbances are observed in patients in whom the tumor involves both sides of the brain. Psychogenic reactions are determined more frequently by physical or by subjective disabilities and by the total personality of the individual rather than by the location of the tumor in any one part of the brain. The pathogenic factors in the production of mental symptoms, in the order of their importance, are (1) involvement of both sides of the brain, (2) increased rate of development of symptoms of tumor of the grain in general, (3) the rapidity of the tumor growth, (4) sudden appearance and rapid development of intracranial hypertension and (5) supratentorial location of the tumor. The age, general condition and premorbid personality of the patient modify the quality of the mental reactions to physical symptoms.

MEDICAL ECONOMICS

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Address all letters and communications to the Chairman.

The Chairman of this Committee for the year 1937-1938 is taking the liberty of editing this column for this month in order to keep the work of the same progressing until a new Committee can be appointed by the Chairman of the Council at its organization meeting early in June.

One returns from the annual meeting of the Illinois Medical Society each year with increasing faith in its members and renewed hope for the future of medicine. And this in the face of the ever increasing barrage of propaganda being presented in the lay press, both newspaper and periodical. There is no doubt that the rank and file of the medical profession is alarmed as to the future of medicine. The attendance at the Secretaries Conference, where the current problems of the medical profession were discussed by the outstanding men of the profession of Illinois, aided by representatives of the American Medical Association, was the best in recent years. The duties of officers in County Societies was discussed and all present received new ideas as to the duties and the importance of the same. The proposed Survey of the A.M.A. was presented by Dr. Leland and as the scope of the same became apparent to those present, the secretaries appreciated the large amount of work that would be required as well as the time needed to complete the same. At the end of the meeting many of those present expressed the opinion that sufficient time had not been allotted to this important phase of our meeting. On the last day of their meeting, they requested that more time be allotted at the meeting in 1939 and that a better time be given them. The writer has long been of the opinion, that more time should be given to the instruction and assistance of the secretaries in their work, which after all is the real administrative work done between annual meetings

aside from that done by the Council. If we can in any way make their work easier and more effective, it becomes our duty as officers of the society to do so. Surely, they should have additional opportunity to acquaint themselves with the duties and problems of their office. This committee feels that it might be a good idea to have a special day assigned for a conference of the officers of the component county societies at some time other than the annual meeting to discuss the problems of the officers of county societies. When this would be held and where could be decided later. Also the question of paying the traveling expenses of the officers to the meeting, can be decided later.

The Hall of Health, a new venture for the education of the laity, was an outstanding success. At this time it seems that it should be continued, improved and altered, as suggestions and criticisms appear. It also seems that it could best be handled by the Educational Committee.

Most of the members of the House of Delegates seemed to appreciate the accomplishments of the past year and to recognize the fact that our problems are increasing instead of decreasing. Increasing problems will mean increased expense and the House appreciated this by leaving the annual dues at eight dollars for the ensuing year. While the elections were spirited at times, the feeling between the candidates was excellent both before and after the elections and there should be the best of cooperation during the coming year.

Several magazines have in recent issues criticized the medical profession quite severely. Probably the magazine *Ken* in an article entitled "Doctors Versus Health" hit a new all time high in "panning the profession." It seems that there must be a definite plan to ridicule and belittle the medical profession, when such articles can be printed. It is also reported that a

recent issue of *The American Magazine* has adopted the same attitude. However, the writer has not been able to locate the article referred to. The newspapers seem to take especial delight in announcing dissension in the ranks of the medical profession. On May 19, the day the annual meeting of the Illinois State Medical Society was completed, when there was considerable interest to both the public and the profession to be reported as a result of the meeting, one of the papers of Chicago played up the report of the Medical Society of New Jersey, which criticised the work of the Editor of the *Journal of the American Medical Association*. With so many subjects of medical interest to which it might have given space, it is difficult to understand why they continue to feature criticism of this nature, which after all are of importance only to our members and should be discussed and decided in our own meetings and not in public.

The Chairman of the Committee has been encouraged by the number of members of the society who are requesting information in regard to preparation of papers to be presented before lay groups. This is our main field of education of the laity and every county society should have several men who are both willing and ready to talk on the future of medicine, state medicine and allied subjects, whenever they are requested to do so. This can be done by practically any member of the profession who has read the articles appearing in either this *Journal* or the *J. A. M. A.* during the past year and then taking time to correlate them. If additional data is desired, package libraries on either subject are available at the office of the Secretary of the Educational Committee of the Illinois State Medical Society, Miss McArthur, at 30 North Michigan Avenue. It should be one of the objectives of the officers of every component county society in the state to have a selected group of men prepared for this work.

The members of the society should watch the report of the action taken in regard to the future of the work of the Medicolegal Committee of the Illinois State Medical Society. Aside from inability to pay the cost of lawyers' fees, the work of the committee is in no way hampered and in fact it should be expanded. When this is understood by the members, we hope that they

will feel better about the future work of this committee, which has been under a cloud the past year.

This has been a rather general discussion of the business of the annual meeting and we hope that it will stimulate you to read the proceedings of the meeting in detail including the annual report of the officers as they are published in the *ILLINOIS MEDICAL JOURNAL* in July. It is the duty of every member to know what the officers of their society are doing and the annual reports will help them to do so.

E. S. HAMILTON,
Chairman of Committee.

Correspondence

NO DUPLICATION OF FINGER PRINTS

Dear Dr. Whalen:

I have just received a clipping entitled "Finger Printing Is Not Infallible" from the April, 1938, issue of the *ILLINOIS MEDICAL JOURNAL*, which was forwarded to me by a member of the medical profession in Illinois. (See page 352.)

I have noted the second sentence of this article which reads as follows: "This does not mean that the popular belief that two fingerprints are alike is erroneous." I feel that this sentence does not convey the meaning which is intended, as it indicates that there is a popular belief that two fingerprints are alike which, of course, has no foundation. It also appears to me that the article indicates the Bertillon system of identification has been confused with the fingerprint system, and I did want to write and explain that there is no connection whatever between the Bertillon system of identification and the fingerprint method, since the latter supplanted the use of the Bertillon system in law enforcement work. May I further advise that no two fingerprints have ever been found that are identical and mathematical computation indicates that such an event is impossible.

I feel that the public might gain an erroneous impression from the notation that there is a possibility of two fingerprints being alike and, inasmuch as there is no basis for such an assumption and since it might implant doubt as to the accuracy of fingerprint identification in the minds of our people, I felt that I should call this matter to your attention.

J. EDGAR HOOVER.

ORGANIZATION OF THE MATERNAL WELFARE GROUP IN ILLINOIS

To the Editor: The organization of the Maternal Welfare group in the state has been almost entirely completed so that now in every county of the state there is a representative. Many counties have proceeded with the county platform with much more zeal than others. This may be due to the hesitancy of physicians to foster an educational program. One cannot but wonder if the education of the public along newer and modern medical methods had been in the hands of the medical profession in the past that perhaps now we would be leaders in the field of medical education rather than having this duty performed by newspapers, radio and lay publications.

That inbred fear of advertising has held the physician bound to his routine duties and lay organizations have assumed leadership to such a degree that it is often difficult for members of the profession to even be considered, let alone assuming or being elected leaders.

Any new movement in the past few years has the fear of state control attached. Certain examples of the past clearly demonstrates that this fear is not unfounded. However, in the present program, strictly in the hands of organized medicine and with only the interest of the medical profession at heart, this stigma of state intervention may be banished. Illinois is fortunate indeed that through the alertness of the Council of the Medical Society the present Maternal Welfare Committee was appointed to direct activities along prenatal lines. There is now the very closest co-operation between the Public Health Department of the State and members of this group and their combined efforts are directed toward making the public and the physicians more "obstetrical minded."

Only because of the desire to get a definite program before the county societies and to demonstrate some effort on the part of physicians to cooperate in every way in reducing maternal and early infant mortality has this program assumed the present appearance of rapid action.

The present feeling among lay organizations generally is that if the medical profession does not attempt to do something toward reducing the hazards of childbirth, that they will attempt to do so through legislation. This is not as much

of a threat as it is a subject of popular interest and appeal.

The very fact that the entire membership of the State Society may participate in the program should warrant close cooperation. There is no individual glory attached to this movement. Representatives of this Committee in each county are expected to act in such a capacity that only the combined efforts of the local society may become manifest to the public as an agent in attempting to teach the laity, that better conditions now exist for reduction of obstetrical catastrophies and it rests entirely with them the responsibility of availing themselves of these opportunities.

DR. T. B. WILLIAMSON,
Chairman.

DR. JOHN F. CAREY,
Secretary.

THE RELATION OF PHYSICIANS AND HOSPITALS

To the Editor: At this time when the medical profession is much concerned with the attempts of lay groups, cooperatives, insurance companies, associations, corporations and governmental agencies to take over various phases of the practice of medicine, this special Committee of the Adams County Medical Society appointed to study the relationship of physicians and hospitals, moves the adoption of the following principles to prevent similar relations between hospitals and physicians which are not in the best interests of public welfare.

"A. Community hospitals are civic enterprises, having a primary charitable motive, undertaken by philanthropic laymen who assume the financial obligation of providing place, equipment and personnel, and by philanthropic physicians who assume the obligation of providing medical care. Such a hospital is a joint enterprise to render aid to ill, indigent persons; the lay supporters contributing time and money as such, the medical supporters contributing time and money in the form of professional service.

"B. In order to provide hospitalization for the nonindigent such hospitals customarily maintain accommodation for the care of full-pay patients, as well as for the care of partial-pay patients,

who pay for this service according to their ability.

"C. In any of those types of hospitalization, however, the hospital as a corporation provides room, board, nursing and material, beyond which it has nothing to dispose of; at this point the medical staff enters the equation as the essential element to make the service of the hospital whole and effective.

"D. The Staff physicians' services are essential to the charitable purpose of the hospital and the acceptance of his appointment has a certain contract implication, viz., to perform gratuitously the professional service to make effective the hospitalization afforded gratuitously by the institution. A correlative implication of the contract should be that if the institution is recompensed for its service to the patient, the physician should be entitled to recompense in the same proportion, for if the hospital owes it to the supporting public to make the load of charity as light as possible, it owes the same duty to its supporting staff. Otherwise, the effect is that the lay supporters of the hospital are relieved of part of their burden, whereas the medical supporters bear the entire burden of their contribution.

"E. This contribution to the hospital enterprise is not offset by any advantage offered by the hospital connection to the staff physician. . . If it be said that the hospital lends prestige to the staff, it is much more true that the prestige of the hospital depends upon that of its staff.

"F. Hospitals should realize that the profession, through its central organization, the American Medical Association, has evolved certain 'principles of medical ethics,' outlining the duties of physicians to each other, to the professions at large and to the general public: that this code is the evolution of hundreds of years' experience being based on principles that are primarily for the good of the public in order that the profession can serve it most effectively. Since the profession is bound by these principles, hospital boards should study them carefully in order to better realize the physicians' viewpoint. (While hospitals have no general code of ethics, those prescribed for physicians have generally been interpreted as applying to hospitals. The connection between medical ethics and hospitals is also recognized in codes of ethics for state hospital associations and in the code of ethics for

hospitals publicity of the American Hospital Association.) This should enable hospitals to correlate their service more adequately to cooperate with the profession to render better service to the public. One section of the 'principles of medical ethics' with which many hospital boards are apparently unacquainted states (Article 6, Section 4):

"'It is unprofessional for a physician to dispose of his professional attainments or services to any lay body, organization, group or individual, by whatever name called, or however organized, under terms or conditions which permit a direct profit from the fees, salary or compensation received to accrue to the lay body or individual employing him. Such a procedure is beneath the dignity of professional practice, is unfair competition with the profession at large, is harmful alike to the profession of medicine and the welfare of the people, and is against sound public policy.'

"G. Hospitals being corporations, their management and policies are the proper prerogatives of their boards of directors. The organization of such boards commonly has overlooked the fact that there are two necessary factors—the services of laymen, as well as the services of physicians, to make the institution effective and the medical staff has usually not been represented. Failure to have the medical staff represented on the board of directors of hospitals has occasioned two undesirable results: 1. the appearance of policies prejudicial to the medical profession, because the influence and information obtainable from medical members has not been available; and 2. the development of the idea that the staff members are servants of the institution rather than essential partners.

"H. It follows that the medical profession to serve hospitals most efficiently for the best welfare of sick people, should have proper representation on hospital boards and that hospitals should recognize the profession as partners rather than servants of the institution. (It is suggested that not less than two members of the hospital staff, preferably chosen by the staff itself, serve on the hospital board.)"

In view of the above stated principles the following recommendations are made:

"1. That no hospital shall be permitted to engage in any form of contract practice with an individual or group of individuals, for any

purpose other than the use of its physical facilities, materials and non-medical services such as room and board, use of the operating and delivery rooms, drugs and medicines, surgical dressings, appliances and general nursing care.

"2. That no hospital shall offer, for a price, any medical service.

"2A. That nothing in the foregoing shall be construed to indicate unethical conduct on the part of either hospital; to continue the present or similar arrangements with x-ray and laboratory specialists is concerned and also adopt a uniform fee schedule for the above specialties by both hospitals.

"2B. That both hospitals shall be on the same basis insofar as any financial arrangements with any insurance company are concerned.

"3. That in no case may a hospital charge a patient for other than the use of its physical facilities, materials and non-medical services.

"4. That emergency and accident patients may have first aid only, administered at the hospital, and the physician selected by the patient must be immediately notified. In no case shall a patient, able to pay, be admitted to the service of a staff member without the request of the patient's own physician, if there be one.

"5. That patients who are covered by compensation, health or accident insurance, cannot be considered as indigent.

"6. That none but strictly indigent patients shall be admitted to hospitals.

"7. That no patient, except in emergency, shall be admitted to the hospitals without a letter from a physician, local priest or pastor, welfare worker, or other reputable citizen, to be followed by adequate investigation by the social worker of the hospital, who shall be able to certify that the patient is known to be indigent.

"8. That patients who have been discharged shall not later be readmitted to a hospital, without certification that their present economic condition is the same as his previous admission.

"9. That, as a condition upon which members of the Adams County Medical Society may continue to serve on the staff of a hospital or dispensary, the institution shall be approved annually by the Adams County Medical Society with regard to its fair practices."

Unanimously approved with the recommendation that the Secretary of the Adams County

Medical Society send a copy of same to the Sister Superior of St. Mary's Hospital, to the Superintendent of Blessing Hospital, to all the members of the Board of Trustees of Blessing Hospital, to all members of the Advisory Committee of St. Mary's Hospital, to the Council of the Illinois State Medical Society, and to the Editors of the ILLINOIS MEDICAL JOURNAL and the *Quincy Medical Bulletin*.

Signed:

ARTHUR H. BITTER,

Chairman.

WARREN PEARCE, M. D.

H. P. BEIRNE, M. D.

RALPH McREYNOLDS, M. D.

EDUCATIONAL COMMITTEE

Report for April and May, 1938

ANNUAL MEETING

Prepared material for the Handbook of the Hall of Health.

650—Releases to papers re annual meeting.

1,000—Newspaper stories and letters sent to newspapers and principals and libraries announcing Hall of Health.

500—Programs announcing state meeting mimeographed and mailed to medical women in Illinois.

EXHIBITS

Presented exhibit at the Illinois State Dental Society Annual Meeting in Peoria, May, 1938.

Exhibit prepared for the National Recreation Congress held at the Sherman Hotel, Chicago.

Two exhibits prepared for the Marshall Field & Co. Annex Building—one on "Appendicitis," the other on "Hobbies and Health."

Exhibit prepared for "Hall of Health."

SPEAKERS' BUREAU

126—Programs requested by lay groups. Cooperated with agencies sponsoring YOUTH WEEK, Health Week, Mothers' Day, and Child Health Day, by arranging suitable health talks.

Secured speaker for the Annual Meeting of the Illinois Congress of Parents and Teachers in Quincy, Illinois, April.

RADIO

27—Radio programs given from Chicago stations. Copies of talks sent to Danville, Decatur and Bloomington for use over local stations.

Furnished material to Station WILL of the University of Illinois in connection with the broadcasts given by doctors of Champaign and Urbana.

SCIENTIFIC SERVICE

63—Speakers scheduled for scientific programs before county medical societies.

Assisted five Councilor Districts with their Maternal

Welfare Programs. Secured speakers and gave the following additional service.

304—Notices sent to doctors announcing 10th Councilor meeting.

245—Notices sent to doctors announcing 7th Councilor meeting.

321—Notices sent to doctors announcing 5th Councilor meeting.

303—Notices sent to doctors announcing 6th Councilor meeting.

322—Notices sent to doctors announcing 8th Councilor meeting.

682—Invitations sent to doctors announcing obstetric and pediatric programs sponsored by Vermilion and Champaign counties on May 5th and May 12th.

ASSISTANCE TO COUNTY MEDICAL SOCIETIES

In an effort to create interest and build up attendance, the Committee has assisted secretaries by sending announcements of their meetings to a large list of doctors. This type of assistance might become a burden, but because the results have been so very worth while, it seems wise to continue this help to county societies.

297—Notices for Effingham County.

148—Notices for Perry County.

151—Notices for Henry County.

300—Notices for LaSalle County.

200—Notices for Bureau County.

271—Notices for Franklin County.

470—Notices for Champaign County.

238—Notices for Ford and Iroquois Counties.

NEWSPAPER SERVICE

The following articles were written and approved: Physical Therapy, Hoarseness, Mothers' Day, Dizziness, Child Health, Summer Time Diet, Spring Time May Be Hay Fever Time, Your Baby, Rheumatism, Burns, Swat That Fly, Hobbies, Sunbathing.

1,990—Releases to newspapers using our regular health column.

960—Releases to Chicago and downstate libraries.

5,496—Releases to Home Advisers, W. P. A. Teachers, Health Chairmen, Schools, Red Cross, Y. M. C. A. and Y. W. C. A.

SPECIAL NEWSPAPER PUBLICITY GIVEN TO MEDICAL MEETINGS

80—Releases for St. Anthony Hospital, Rockford.

47—Releases for Henry County.

21—Releases for Franklin County.

48—Releases for Jefferson-Hamilton County.

42—Notices for Effingham County.

72—Releases for Bureau County.

76—Releases for Fulton County.

65—Releases for Champaign and Vermilion Counties.

4—Releases for North Shore Branch Chicago Medical Society.

50—Releases for 5th Councilor Maternal Welfare Meeting.

68—Releases for 7th Councilor Maternal Welfare Meeting.

48—Releases for Vermilion County Maternal Welfare Meeting.

60—Releases for Obstetric and Pediatric programs Champaign and Vermilion Counties.

126—Releases for Obstetric and Pediatric programs, Ford and Iroquois Counties.

72—Releases for Champaign County.

SPECIAL COOPERATION

The Home Bureaus of the State seem to be interested in promoting periodic health examinations. Leaders have requested hundreds of copies of the Illinois State Medical Society examination form.

Letters were sent to county society officers regarding the Summer Round-Up activity sponsored by the Illinois Congress of Parents and Teachers.

Moving picture films were secured for a number of lay organizations.

Many package libraries were furnished doctors and a number made up for high school and college students.

Announcements of medical programs in Chicago furnished the Chicago Community Forum Service for wide publicity.

Respectfully submitted,

JEAN McARTHUR, Secretary.

UNITED STATES CIVIL SERVICE COMMISSION

Washington, D. C.

The Civil Service Commission expects to announce examinations on June 13 for nurse positions in the Indian Field Service (including Alaska), Department of the Interior. The examinations will cover three classes of positions:

PUBLIC HEALTH NURSE, \$2,000 a year.

GRADUATE NURSE (General Staff Duty), \$1,800 a year.

NURSE TECHNICIAN (Bacteriology and Roentgenology Combined), \$1,800 a year.

There is especial need for persons *who are able to meet the requirements* for the positions of Public Health Nurse and Nurse Technician.

The announcement will show the requirements. Persons interested in such employment may obtain a copy of the announcement, as soon as issued, from the Secretary, Board of U. S. Civil Service Examiners, at any first- or second-class post office, or from the United States Civil Service Commission, Washington, D. C.

INFORMATION FOR DOCTORS IN BERLIN

There has been set up in the Kaiserin Friedrich-Haus, Berlin N W 7, Robert Koch-Platz 7, an information bureau which will be able to give doctors every kind of information. The office is semi-official and gives advice impartially and free of charge. It would be to the advantage of every doctor to get into touch, before or after his arrival in Berlin, with the Kaiserin Friedrich-Haus, so as to save time and make the most of his stay.

MORE DIABETES

Although relatively easy to diagnose and control, diabetes was responsible for a sharp increase in mortality last year in Illinois. Particularly significant was the higher death rate among people less than sixty years of age. The number of deaths among all ages in the State went up from 1,997 in 1935 to 2,293 in 1936. Among people less than sixty, the number of fatalities went up from 655 to 731.

This is discouraging since diabetes can be so readily controlled. Self-discipline with respect to diet, exercise and the use of insulin is the principal requirement. Habits and practice in relation to these things must, of course, be based upon an accurate knowledge of the diabetic condition. This, however, can be ascertained through medical examination and study.

Diabetes can be well controlled in some patients through a strict regulation of diet and exercise alone. Others require insulin. The amount and variety of food that may be consumed safely depends upon the condition of the diabetic and the amount of exercise which he is able to take. Experimentation under the guidance of a physician after diagnosis has been established will reveal accurately the tolerance of a patient and whether or not insulin is required. Frequent tests of the urine for sugar, which a patient can learn and do easily, will keep a diabetic informed with respect to his success or failure in controlling the disease.

It is estimated that there are about 30,000 diabetics in Illinois. About two-thirds are women and a majority are over forty years of age. Overeating brings on the disease, makes it worse and leads to diabetic coma, according to Joslin. "Hence" says this eminent authority on diabetes "in the treatment of the disease overeating must be avoided at all cost."

Periodic medical examinations after forty is a good way to detect diabetes before serious symptoms develop. Detected early the disease can be controlled in many cases without resorting to insulin—Illinois Health Register.

TREATMENT OF LEFT VENTRICULAR FAILURE

Fred M. Smith, Iowa City (*Journal A. M. A.*, Aug. 28, 1937), declares that left ventricular failure characterized by the occurrence of paroxysmal dyspnea is a common form of cardiac disability. The treatment is concerned with the control of the paroxysmal dyspnea and the subsequent restoration of the cardiac function to the maximum efficiency. Ordinarily the attacks are readily abolished by the measures generally employed in the treatment of cardiac failure. The more severe form, however, is a major cardiac emergency and demands prompt and energetic treatment. In the consideration of the treatment it is important to bear in mind the following aspects of the condition: (1. An inadequate coronary circulation is commonly a prominent factor in the production of the cardiac disability. 2. Insufficiency of the left ventricle results in pulmonary congestion. 3. With the progression of the cardiac disability and the maintenance of a disproportion

tion between the efficiency of the left and right ventricles, a stage is finally reached which permits the occurrence of paroxysmal dyspnea. 4. The attacks are precipitated by factors that impose excess demands on the left ventricle. The onset in the more severe form often intensifies the exciting agent and initiates other factors, which promote the pulmonary congestion, and thus a vicious cycle may be produced.

THE CHEMISTRY OF THIAMIN (VITAMIN B₁)

In an endeavor to promote the adoption of a universally acceptable term for vitamin B₁, based on the chemistry of the substance, Robert R. Williams, New York (*Journal A. M. A.*, March 5, 1938), has proposed "thiamin" (chloride, bromide, sulfate and so on) pending action of the Conference on Vitamin Standardization. The greater part of the labor which has been expended on the chemistry of this substance had to do with its isolation. Once a few grams of the vitamin became available, its structure was fully established in three years and its synthesis followed almost immediately. The biochemistry of thiamin, biochemical lesion in thiamin deficiency and the methods of its assay and distribution in foods are discussed. The therapeutic response to thiamin remains the most trustworthy diagnostic test. The diagnostic value of thiamin therapy is largely lost if crude natural preparations are used both because of the uncertainty of their standardization and of the presence of other vitamins which may be responsible for the observed effects. After demonstrating a B₁ deficiency and rectifying the immediate shortage, the physician should endeavor to direct the diet of the patient toward a more adequate supply of the vitamin. In the long run one should look to the grocery store rather than the drug store for a normal intake.

SOME OF THE MILESTONES PASSED IN THE MARCH OF MEDICINE DURING THE PAST DECADE

PERNICIOUS ANEMIA

Yesteryear—A few short years ago a patient with pernicious anemia was doomed to a lingering death.

Today—Now this condition is effectively treated with liver, liver extracts or ventriculin.

ADDISON'S DISEASE

Yesteryear—Patients suffering from Addison's disease were considered hopeless.

Today—Now when cortin, an extract from the adrenal cortex, is used in conjunction with his salt intake, there is a noticeable improvement in a few hours, and the road to recovery is reached in three to five days.

ERYSIPELAS

Yesteryear—No specific treatment.

Today—Now erysipelas antitoxin commonly employed. Successful treatment with ultraviolet ray instituted.

Original Articles

INTER RESPONSIBILITIES OF THE MEDICAL PROFESSION, SOCIETY, INDUSTRY AND GOVERNMENT

R. K. PACKARD, M.D.

CHICAGO

There are many problems confronting the American people today, and there seems to be little unanimity of opinion regarding their solution. We might all agree that their solution cannot be consummated through any single agency, but rather through cooperation of our various agencies of society, rather than through any coercive movement. It seems quite evident that all agencies are unwilling to admit frankly the mistakes they have made or are making and start a new program, but rather insistent upon throwing bricks at each other. Thus we find Government blaming Industry—Industry blaming Government—Society blaming one and then the other, and the Medical Profession sometimes being attacked by all three. That there are certain responsibilities existing must be assumed, and I briefly desire to discuss with you what I think a few of these responsibilities are.

RESPONSIBILITY OF THE MEDICAL PROFESSION TO SOCIETY AS A WHOLE

1. To make available adequate medical care for the American people by continuing the high standards of medical education and high standards of hospitals, their personnel and staff, continued individual and institutional research, post-graduate medical education in the larger centers and by refresher courses carried to the various points of medical practice.

2. Cooperation with the United States Public Health Service, the State Department of Public Welfare and local Boards of Health in the prevention of disease, and improvement of sanitation, quarantines and such other matters as rightfully come under the jurisdiction of those departments, that add to the safeguarding of Public Health.

3. To keep society informed regarding the progress of medicine and also regarding fake cures and patent medicines that are advertised through various publications and over the radio.

4. To admit that there are many problems

regarding medical care existing at the present time and to assume definite leadership in studies and surveys that will determine such problems and then proceed with all other agencies in their correction as near as is possible in a continuous changing society.

RESPONSIBILITY OF SOCIETY TO THE MEDICAL PROFESSION

1. We believe that experience has shown that while the present practice of medicine in the United States is not perfect, it is superior to the new experiments in other countries dealing with various forms of Insurance Medicine, and Socialized Medicine, and if society desires to maintain and improve the present system then society must assume the responsibility of not allowing political maneuvers to change materially the system. Society must not accept false promises.

2. If society desires continued research work it must cooperate in the following ways:

A. It must not allow Anti-Vivisectionists to take control of that part of research work in which animal experimentation plays such an important role.

B. It must keep research work under individual and institutional management and not allow it in any way to be influenced by political appointments or control.

3. If society desires to maintain the high standards of medical education which is the fundamental background of adequate medical care and to maintain the high caliber of young men entering medical school at the present time, then society must assume some responsibility, for not allowing this high standard to disintegrate as it has in many foreign countries.

RESPONSIBILITY OF THE MEDICAL PROFESSION TO INDUSTRY

1. I believe the medical profession has always realized the fact, that under what we term the capitalistic system, there will always be various types of income groups, all requiring the same type and skill as regards medical care, and the medical profession has always assumed the responsibility of furnishing them medical care on the basis of their ability to pay. That there has been an occasional deviation from this principle cannot be denied but on a whole it has been the exception rather than the rule. Some

members of the medical profession and some few outside of the profession have raised the question, Why should the doctor cut his bill for services rendered when the landlord, merchant et al., do not do so? The answer to this question seems very simple, there is but one standard of medical care while there are various types of shelter, food and clothing, that at least answer the purpose for which they are intended, but one does not reasonably expect that there should be a different procedure in the treatment of acute appendicitis in the low and high income groups, and therefore the charges must remain on the ability to pay rather than on the type of service rendered.

2. The medical profession should cooperate with industry and capital to render the best possible care to the injured employee. Members of the medical profession, in cases of dispute, should testify for or against the employee or employer, only on a strictly impartial basis. Employees and employers should both be protected. Again in civil cases arising from injuries the medical profession should assume responsibility of rendering testimony on the basis as above stated. That there have been abuses on the part of both parties cannot be denied and such abuses have resulted in a loss of confidence on the part of all concerned including society as a whole.

RESPONSIBILITY OF INDUSTRY AND CAPITAL TO THE MEDICAL PROFESSION

1. Industries carrying their own compensation or covered by Insurance Companies should not seek medical services at a reduced cost below the standard fees for the community in which such service is rendered. This also should apply to hospital expenses, inasmuch as this is a cost in the production and distribution of products, and should be charged to such costs, and competition should not be sought in asking physicians and hospitals for reduced rates for services rendered.

2. If the capitalist system is to remain in a democratic form of government, then it seems obvious that capital and industry cannot escape their responsibility in the matter of assuming a larger responsibility to their employees. They cannot hope to retain a system that pays such a low wage that a large percentage of the people cannot afford to pay reasonable charges for

adequate medical care. If there is to be an independency of capital there must of necessity be some independency of labor. In recent years some members of the capital group have said that the cost of medical care was too high, that it was beyond a large majority of peoples' ability to pay. This gained considerable momentum during the prosperous era of 1920 to 1930. Some went so far as to say that there should be little or no profit accruing to medical profession for services rendered. It would seem obvious that if capital really believed such to be true, then society as a whole and the medical profession could likewise say, that no individual has the right to profit or income, commensurate with his skill and initiative. I think that management must change this attitude if it desires to preserve individuality in any of the branches of our social state. I am willing to admit that individuals receiving a wage of \$12.00 to \$15.00 a week cannot afford adequate medical care for any serious illness, but management must not lay this at the door of the high cost of medical care, but admit that it is the failure of management to pay an adequate wage. If management could not pay a wage during the period of great prosperity from 1920 to 1929 that enabled the vast majority of labor to have adequate medical care then it seems obvious that the system is not adequate for the American people. This, however, I do not believe. If one reviews during this period the large stock dividends and cash dividends which were passed out by management, one can readily assume that such actions of management had much to do with the wild speculation of that period. If on the other hand management had used a portion of this surplus to increase payrolls that would have provided sufficient income for adequate medical care, it would have had much to do with preventing wild speculations which eventually engulfed both capital and labor. I do not desire to infer that I do not believe in the capitalistic system because I am firmly convinced, that if we are to survive our present difficulties, it must be under this system. I am equally convinced that better management must come into being if we are to survive. I am also convinced that we need better government than we are having at the present time, and so we might say that both government and management must change if we hope to survive. Labor constitutes the

only real wealth because natural resources and huge factories produce wealth, only through labor. Management must not say that we will give you employment when business is good and use our excess profits for distribution in stock dividends and cash dividends and then when business is bad, we will relinquish all our responsibility to labor during that time. A great majority of the medical profession do not believe that government should run any business, because as a profession we recognize the study of case histories and derive our methods of management through such study, and if we were to take the case records of world history, we will find that in every instance where government has assumed the control of society and capital, it has ended in disaster for the government, for capital and industry and eventually for the people. Therefore the responsibility of capital to the medical profession is an indirect responsibility in assuming a greater responsibility to labor in the form of better long run management, that realizes that its life depends on its ability to furnish steady employment at an adequate wage.

RESPONSIBILITY OF THE MEDICAL PROFESSION TO THE GOVERNMENT

1. The medical profession appreciates the fact that government not only has the right to, but should be primarily interested in the health of its people, therefore if the medical profession desires to retain its identity in its present form it must cooperate with government in the furnishing of adequate medical care to individuals who because of their inability to work, the lack of employment and indigency, are not able to pay for medical service. There will always exist these three types of individuals. The medical profession cannot be expected to render adequate medical services to the large number in this group without remuneration, but the profession should cooperate with governmental agencies in plans that do render adequate medical service at the lowest possible cost commensurate with such service. The medical society should act as the policeman of its own members in the rendering of adequate service and in the matter of keeping the costs of such service as low as possible, consistent with proper care.

2. Inasmuch as the health of the people has

become a national issue, occupying much space in the public press, being debated in our public and private schools, and finding its way into political discussions, it seems obvious that the medical profession should conduct a national study, comprehensive in its scope, dealing with all phases of the subject, and furnish such a report to the various agencies interested in facts regarding problems of health and disease, the facilities available for proper care and prevention, and how adequately these facilities are being used. Such a survey is now being made in the United States, and the Illinois State Medical Society has already started work on this survey.

RESPONSIBILITY OF GOVERNMENT TO THE MEDICAL PROFESSION

1. Statesmen and politicians should recognize the fact that medicine has made great progress in the last fifty years under our present system of education, research, practice and prevention, and that all of our great discoveries have been passed on to the public without individual profit or commercial exploitation. They should realize that those who cry about "The High Cost of Medical Care" and "Money Mad Doctors" have no such record to point to. They should realize that that portion of the public press that advocates some form of socialized medicine in one column and pleads for the liberty of the press in the other, cannot be thinking in terms of full liberty. They should realize that those who advocate the capitalistic system for one branch and socialization for another, cannot have a true conception of democracy for all the people. The first responsibility of the government is to cooperate with the medical profession in whatever changes seem necessary to render a more adequate medical service. The second responsibility of government is not to use public health as a means of gaining votes for any political party unless they can demonstrate without question that the progress of medicine and its application to medical needs is declining.

The third responsibility of government to the medical profession, society, and industry, is to cooperate with the medical profession in the care of the indigent because of unemployment, the care of indigent because of inability to work or due to age or physical handicaps, and those in

the low income group who because of the high incidence of illness in a given period of time, are unable to afford adequate medical care. Government, including Federal, State and local should cooperate with the local county medical societies and other agencies in establishing a program for the care of the above classes. The first principle involved should be that of free choice of physician; second, a certain proportion of funds allocated for relief purposes should be for medical care. Such a plan is pliable because it fluctuates with the relief load, and if the free choice of physician is applied, no special machinery need be set up to add to medical expense. Third, medical relief alone should receive consideration for that portion of the low income group that are able to provide for themselves aside from medical care. Until management of capital and industry can pay a sustaining wage, they will face the necessity of some form of taxation upon themselves and society as a whole to defray the expenses of the care of indigency as relates to food, shelter, clothing and medical care. Even with a sustaining wage a large number of people will not provide a surplus for medical care for periods of unemployment or for old age. Thus it would seem that management has to create some form of retirement income and unemployment income or government has to assume such responsibility until such time as the American people are willing to assume more of their own responsibility than they seem to at the present time.

In summarizing the responsibilities, it would seem that they can only be solved by cooperation between the various branches of our social structure, and that we must solve them all on the basis that any lasting solution must be based on our present system of a democratic form of government, retaining our capitalistic system, freedom of individual initiative, freedom of the press, and the retention of our present system of medical care.

In every branch that we as individuals happen to be associated with, let us realize that we are not perfect, let us study our own problems, confess our own mistakes, clean our own house if need be, and above all, say that we are going to maintain a high standard of ethics for our own management.

THE CAUSE OF CANCER

FRANK E. SIMPSON, M. D.

CHICAGO

Three topics will be discussed: 1. Theories of the cause of tumors, 2. clinical investigations of the cause of cancer, 3. experimental investigations of the cause of cancer.

THEORIES OF THE CAUSE OF TUMORS

Theory of Embryonal Cell Rests. Influenced by Virchow, Remak and others, Cohnheim suggested that certain misplaced groups of embryonal cells formed the starting point of tumors.

He attributed the start of a neoplasm chiefly to a change in the blood supply to the part. This theory accounts in some degree for the site and structure of certain tumors. It does not explain, however, why the embryonal cells automatically continue to multiply nor why a tumor and not a normal structure is formed.

Theory of Tissue Tension. Abandoning the view that the tumor cells must be embryonal, Ribbert¹ suggested that adult cells also have sufficient regenerative powers to produce tumors.

He believed that if cells are removed from the influence of "tissue tension" by which they are normally kept in place, a tumor might result from the overgrowth of the dominant tissue.

Neither Cohnheim's nor Ribbert's theory explains the fundamental reason for tumor growth.

Theory of Cell Autonomy. This theory implies that the cause of tumors—benign or malignant—lies wholly or chiefly in the cell itself.

But just as we do not know the cause of the life processes of cells—why they have the properties of motion, nutrition, function and reproduction—so we are ignorant of why a cell suddenly devotes its energies to lawless, uncontrolled multiplication and forms a tumor.

According to this theory, some change takes place in the cell which alters its behavior.

The theory of cell autonomy has received a good deal of support from experimental investigations on the lower animals with carcinogenic agents. Some of these experiments will be described later.

Microbic Theory of Cancer. While few have believed that benign tumors are due to microbes, many have held the theory of the microbic origin of cancer. Bacteria, coccidia, protozoa, spirochaete, mycetozoa, and blastomycetes have been found in cancerous tissue by different workers.

In some instances it has been claimed that the organism found has been grown in pure culture and has produced the disease when injected into an animal.

Three problems may be briefly discussed. First, does the organism found cause the tumor; or second does it merely occur in the tumor as an accidental circumstance; third, does some undiscovered, perhaps ultramicroscopic microbe, living in symbiosis with the cancer cell cause the growth?

Organisms Found in Cancer. In a few special instances, an organism has been discovered which pathologists agree is the cause of the cancerous process in which it is found.

In rats, Fibiger² demonstrated that a nematode worm may cause gastric carcinoma. These investigations will be described later.

In man, the ova of *Bilharzia hematobia* may cause chronic irritation of the bladder wall resulting in carcinoma. In these and a few other special instances the evidence is convincing that the microorganisms described are the actual agents causing the tumor.

In the main, however, the claims for various organisms as causal agents of tumors have not been confirmed.

Accidental Inclusions. Ewing³ has frequently found trichinae in cancerous tongues.

Lycopodium seeds, derived from the surgical dressings, have been observed engulfed in the cells in cancerous breast tissue. Due to phagocytosis, many other intracellular bodies—cork cells, particles of pigment, microorganisms of various kinds—have been found. Most of the microorganisms and all of the foreign bodies found in cancerous tissue are usually regarded as accidental inclusions because of the lack of convincing evidence that they bear a causal relation to the tumor.

The so-called "bird's eye" inclusions in cancer cells once regarded as parasitic organisms are now believed to be due to changes in the secretions of the cell or in its centrosomes.

Ultramicroscopic Organisms. Against the theory that cancer in general is due to some undiscovered, perhaps ultramicroscopic microbe, several arguments may be made.

It is the universal experience that cancer is not contracted by those who come in contact with it.

Physicians (Alibert, Wickham and others) who have attempted to inoculate themselves with cancerous tissue have failed.⁴

One of the most striking differences between cancer and any known infection due to a microbe is shown by the difference between an embolus of cancer cells and one from an infection such as tuberculosis.

If a cancer of the lip metastasizes to the lungs, the new cancer focus as it develops is not made up of lung tissue but of cells identical with those of the primary tumor.

A new tubercular focus is composed of cells of the tissue in which the bacilli lodge.

When one considers that such widely different factors as a biologic agent (nematode worm), a chemical agent (tar), and an actinic agent (x-rays), may set in motion the process we call cancerous, the conclusion seems inevitable that there can be no single universal cause of cancer such as a hypothetical microbe.

At the present time, pathologic opinion is strongly against the theory of a universal cancer parasite. The parasite of the cancerous process is probably the cancer cell itself.

CLINICAL INVESTIGATIONS

In the clinical investigation of the cause of cancer two groups of factors may be considered—intrinsic and extrinsic.

Intrinsic Factors. These include age, sex, heredity and groups of conditions conveniently called precancerous.

Age. Carcinoma appears as a rule in those past 35 or 40; sarcoma in those much younger.

Sex. Malignancy occurs more often in females due probably to the frequency of carcinoma of the uterus and breast.

Heredity. Ewing⁵ says: "Nothing about cancer is more generally accepted than its hereditary nature and nothing is less satisfactorily proved."

There are numerous records of so-called cancer families. Broca⁶ mentions a family of 26 individuals in three generations; 16 died of cancer.

Other authors have described similar families such as the family of Napoleon Bonaparte. Identical tumors in the brain of identical twins have been observed.

It has been held that a "general blastoma constitution" or "cancer susceptibility" exists in cancer families. This means practically that the same exciting agent may be effective in some individuals, but not in others, because of the exist-

ence of a type of cell susceptible to extrinsic carcinogenic agents.

This belief receives support from the fact that in the production of experimental cancer only a certain percentage of a group of animals is susceptible to carcinogenic agents.

Most pathologists doubt that heredity plays an important part in the majority of tumors in human beings.

Ewing⁷ says that, as a rule, "hereditary susceptibility to tumors is negligible and the disease does not develop until other factors, which are the real cause of the disease, are brought into play."

Maud Slye's experiments on the influence of heredity in animal tumors will be mentioned later.

Precancerous Conditions. The term precancerous is not altogether a happy one. It is useful, however, as indicating a benign condition or lesion which frequently but by no means necessarily develops carcinomatous changes.

May cancer arise in a normal area or is it always preceded by some tissue change? Both possibilities are usually admitted. So-called precancerous conditions may consist of—

1. Chronic inflammatory changes. Billroth⁸ said: "Without previous chronic inflammation cancer does not exist"; and Ewing⁸ remarks that this dictum, "while subject to exceptions is yet so generally true as to establish the great significance of chronic irritation in tumor genesis."

Almost innumerable examples of the association of chronic inflammation and cancer could be given.

In the skin, mouth and certain other organs, cancer is often preceded by a long history of chronic irritation due to extrinsic agents.

2. Hypertrophy of certain organs, as of the prostate, which may long precede cancer.

3. Physiologic involution of organs, as of the breast, which often precedes cancer.

Involution may be associated with inflammatory conditions, such as "chronic mastitis" in the breast. It is not yet settled whether chronic mastitis is to be regarded as a precancerous condition or merely as one frequently associated with but bearing no direct relation to carcinoma.

4. Benign tumors. Transformation of benign into malignant tumors may occur in some organs.

So-called benign papillomas of the stomach, colon, bladder, etc., may become cancerous. It is possible that some of these tumors are malig-

nant from the start and merely begin to develop more actively at certain periods.

In the breast, carcinoma is much more likely to develop from the epithelium, which lines the ducts or acini, than from a pre-existing tumor such as a fibroadenoma.

In the skin a variety of lesions, including certain tumors, such as sebaceous cysts and nevi, may precede cancer.

Extrinsic Factors. These may consist of 1. biologic, 2. mechanical, 3. chemical, 4. thermal or 5. actinic agents, acting singly or in combination. Perhaps the term "radiation agents" would be preferable to "actinic agents."

Practically all of these factors may be classed as chronic irritants to the tissues.

Biologic Agents. The effect of microorganisms and their toxins is only surmised. These factors are of importance in causing chronic inflammations which so frequently precede cancer. It has been noted for example that cancer of the skin has developed around a sinus due to a suppurating discharge from chronic osteomyelitis.

Trauma. Traumatism to the tissues may be single or repeated, i. e., acute or chronic as to time.

Acute Trauma. Can a single trauma excite a malignant tumor? This question is of great importance from a medico-legal point of view.

In the skin, cancer has been said to follow the bite of an animal or the sting of an insect. We have seen carcinoma of the palm in a physician follow an injury from a burn with a match. It was said that the injury never completely healed.

Slye⁹ has reported a number of instances in which a single trauma, as by a bite or cage injury, was followed by a tumor in laboratory mice. These mice, however, were highly inbred and the same conditions do not obtain in human beings.

Ewing¹⁰ has given five essential criteria which must be established in order to prove beyond reasonable doubt that a single injury caused a given tumor.

It must be shown that:

1. The wounded part was previously normal. It is difficult or impossible to prove this in most instances.

2. The tumor arose at the point of injury.

3. The traumatism was actually inflicted and caused damage to the tissues.

4. A reasonable time limit elapsed between the injury and the appearance of the tumor.

Opinions differ as to what constitutes a reason-

able time limit. Three or four weeks may intervene between the injury and the appearance of the tumor. A much longer interval allows other factors to enter in.

If it can be shown that a wound produced by traumatism to the normal area never healed and was succeeded by the tumor, the presumption is strong in favor of a causal relationship.

5. The lesion is a tumor as shown by the microscope and of a type that might follow disturbed regenerative processes.

In spite of some evidence in favor of the belief that a single injury can cause a malignant tumor the general experience of physicians is against this view.

Recognized Effects of Acute Trauma. Acute trauma may probably be a contributing factor to tumor origin as when an area previously inflamed or otherwise abnormal is subjected to injury.

Traumatism to a tumor already present may undoubtedly cause increased local growth and also favor metastasis by opening up lymph and blood channels.

Traumatized tissue is probably more likely than normal tissue to harbor and favor the development of circulating tumor emboli.

Each case, in which the relation of acute trauma to tumor origin is under discussion, must be decided on its own merits in accordance with the facts that can be determined.

Chronic Trauma. Chronic traumatism, i. e., a slight injury frequently repeated, is well recognized as being a cause of tissue changes which may result in cancer.

In the mouth a sharp tooth or poorly fitting dental plate may cause chronic traumatism and cancer may result.

A combination of chronic traumatism and other factors is probably necessary, however, to produce cancer.

Chemical Agents. These may act 1. directly on the skin by contact or 2. indirectly on the skin or other tissues by gaining access to the body through inhalation, ingestion, or inunction.

Skin Contact. Percival Pott,¹¹ in 1775, showed that chimney sweep's cancer of the scrotum was apparently due to the irritation of soot.

Volkman,¹² in 1875, described tar cancer in the lignite workers of Saxony.

Between 1876 and 1925, 539 cases of cancer of the skin were reported in England in cotton mule spinners.

The tumor was situated usually on the scrotum and adjacent groin and was apparently due to chemical irritation from lubricating oil.

The first clinical sign was a warty nodule, which ulcerated, healed and finally became cancerous.

Workers in anthracene, creosote, lamp black, paraffine, shale oil, soot, tar and many other chemicals may develop skin cancer of the exposed area.

Arsenical cancer of the skin has been noted rarely in copper smelters, handlers of arsenical sheep dip, etc.

EFFECTS FROM INTRODUCTION OF CHEMICAL AGENTS INTO THE BODY

Inhalation. It has been shown by Campbell¹³ that the inhalation of dust from tarred roads produces an incidence of adenoma of the lungs in mice 10 times as great as that of the controls.

It has been thought that carcinoma of the lungs believed by some to be on the increase in human beings, may be due to inhalation of air contaminated with gasoline products and dust from roads treated with tar.

In 1895, Rehn¹⁴ reported three cases of cancer of the bladder in aniline workers in Germany. Since that time many other cases have been reported.

Formerly the cancer was believed to be due to the excretion of the chemical in the urine. Examination of the urine has shown no dye, however, and the tumor develops underneath an intact mucosa. It is believed, therefore, that the chemical acts through the blood stream. It is thought the dye gains access to the body through the respiratory system.

Ingestion. Skin cancer has been observed rather commonly from the ingestion of arsenic. Inorganic arsenic given for long periods in psoriasis and other diseases in the form of Fowler's solution or Asiatic pills is more often responsible for skin cancer than the inorganic compounds. Arsenic granules have been demonstrated in the skin lesions which consist of pigmentations, keratoses, especially of the palms and soles, and epitheliomas.

Inunction. Janssen¹⁵ has reported the occurrence of cancer of the bladder in patients treated with tar for psoriasis over long periods. It cannot be regarded as certain, however, that the tar gaining access to the body is responsible for the development of carcinoma.

THERMAL AGENTS

These act on the skin or mucous membrane by direct contact or exposure.

Local irritation may result from long continued exposure to the heat from tobacco pipe stems, charcoal pans, used in India for warming the body, molten iron in foundries, the sun's rays, etc.

Chronic inflammation and scars may be produced which may terminate in skin cancer.

ACTINIC AGENTS

Actinic agents may act 1. directly on the skin or 2. by gaining access to the body by inhalation or ingestion. Hoffman¹⁶ has given an invaluable review of the subject with many references to which the writer is greatly indebted.

Skin Contact or Exposure. X-rays and radium rays may cause dermatitis, burns, scars, keratoses and ulcerations of the skin resulting sometimes in "radiation cancer." The sun's actinic rays may cause similar effects.

Inhalation. It has been known for centuries that miners of cobalt, nickel, bismuth and arsenic in Joachimsthal and Schneeberg often developed a disease of the lungs which terminated fatally.

In 1879, Harting and Hesse¹⁷ showed that these miners frequently had a malignant tumor of the lungs.

In recent years, it has been found that inhalation of the gas radon which contaminates the air in certain mines may result in the formation of the "active deposit" on the lining of the lungs. The solid active deposit may then be absorbed by the blood and settle in various organs especially the dense outer cortex of the bones.

Cancer of the lung and osteosarcoma of the bones may thus apparently result from the constant bombardment of these structures by the rays from the "active deposit."

Arsenic has not been found in the lungs of these patients, a negative argument in favor of radium being the harmful agent.

Ingestion. Radio active paint is made by mixing crystalline phosphorescent zinc sulphide with a minute quantity of insoluble radium, mesothorium or radiothorium sulphate.

Since about 1917, this paint has been used extensively in certain factories in the United States for painting and thus making luminous the dial figures and hands of watches.

It was found that employees, usually girls, were in the habit, in spite of warnings, of "point-

ing" the paint brushes with their lips. Small amounts of "paint" were probably absorbed by the mucous membrane of the mouth while some was swallowed.

Most of the paint absorbed and ingested was eliminated by the bowel—some was stored in the bones.

Two types of "radium poisoning" developed. One type in which death occurred soon after exposure, showed necrosis of the jaw bone and leucopenic anemia.

The other type, resulting in death after a number of years, showed osteogenic sarcoma developing at the site of a chronic osteitis.

Bodies of those who died were subjected to chemical analysis, which disclosed that they contained from 10 to 180 micrograms of radium, concentrated largely in the bones.

Up to May, 1931, among 800 girls employed at various times between 1917 and 1924, there were 18 deaths believed to be due to "radium poisoning." 30 others who were still alive showed evidence of radio activity.

In the living patients, a certain mortality from "radium poisoning" was anticipated.

In spite of all precautions, including the use of mechanical devices for applying the "paint" employees in these factories still become radio active, showing an average of $\frac{1}{2}$ microgram of radium in the body, a quantity regarded as being hazardous to health.

It is perhaps needless to point out that there is no danger of "radium poisoning" in the therapeutic use of radium.

"Radium poisoning" is due entirely to the presence in the body of radium itself which bombards the tissues from within.

In radium treatment, the tissues are bombarded with radium rays from without. As soon as the radium is removed there can be no further effects except those due to the action of the rays, which have been used and withdrawn.

EXPERIMENTAL INVESTIGATIONS

Experiments on the lower animals have been done 1. to determine the influence of heredity. 2. to discover carcinogenic agents and their effects.

HEREDITY

Maud Slye's¹⁸ experimental work on heredity of tumors in animals is notable.

She has proved that "inbreeding of tumor bearing animals greatly increases the incidence

of tumors." She terms hereditary cancer susceptibility "the absence of a mechanism fitted to control proliferation and differentiation in regenerative processes."

Mice exhibit not merely a general susceptibility but a definite tissue susceptibility. Mice developing skin cancer transmit it to their offspring; the same tendency holds true in cancer of the breast.

In human beings, even if we assume the existence of "hereditary susceptibility" or a "general blastoma condition" an extrinsic factor is probably necessary to start the cancerous process.

Carcinogenic Agents. In recent years a vast number of experiments have been done on the lower animals with biologic, chemical and actinic agents some of which have been found to be cancer-inducing. Only a few of these experiments can be mentioned.

Biologic Agents. In 1912, Johannes Fibiger,² Danish pathologist, having discovered the remains of a nematode worm (named by him—*spiroptera neoplastica*) in a gastric carcinoma of the rat, carried out a series of experiments.

Finding that certain cockroaches were infested with this worm, he fed them to a series of rats.

12 out of 62 rats which lived over 60 days developed gastric carcinoma which usually contained the worms and ova.

In 2 rats lung metastases were found which were free of worms and ova.

For his work on the cause of cancer, Fibiger received the Nobel Prize.

This notable study demonstrated the dependence of a gastric carcinoma on chronic irritation due to an animal parasite. It also demonstrated that the epithelial cells retained the power of "uncontrolled multiplication" characteristic of carcinoma even after the original irritant disappeared.

Chemical Agents. In 1915, Yamagiwa and Itchikawa,¹⁹ Japanese scientists, produced metastasizing cancer in rabbits ears by painting them with coal tar over periods of 55 to 360 days. These experiments have been repeated in many different laboratories.

Kennaway²⁰ and his colleagues isolated from coal tar dibenzanthracene which is the carcinogenic agent, coal tar being inert when this substance is removed. Kennaway has also produced synthetic dibenzanthracene which is highly carcinogenic. Andervont²¹ has given an invaluable resumé of this subject.

Since 1930, more than 45 different chemical

compounds have been discovered most of them hydrocarbons which will produce tumors in experimental animals.

These substances are closely related chemically. Up to the present time, however, no definite chemical structure has been discovered which can be regarded as cancer-inducing.

Production of Other Experimental Tumors with Chemical Agents. Some of the carcinogenic chemicals act as irritants; others may produce cancer without concomitant irritation. Depending partly on the method of application, malignant tumors of different types and in different sites may be produced. Applied to the skin, epithelioma of the skin may be caused. Injected subcutaneously epithelioma or sarcoma may be produced at the site of injection.

Subcutaneous injections of lard solutions of 1, 2, 5, 6, dibenzanthracene may produce in some mice pulmonary tumors which may appear earlier than the subcutaneous tumors.

Thus it has been found that a chemical agent may cause tumors in internal organs at a distance from the site of injection by gaining access to the circulation.

Persistence of Cell Multiplication. If lard solutions of 1, 2, 5, 6, dibenzanthracene are injected into mice some of the chemical persists in the resulting tumor and may be detected 6 or 8 months later.

In transplants of the 5th and 6th generation of these tumors, the chemical is absent. Thus it is shown as already demonstrated by Fibiger's experiments with the nematode worm, that the cells may retain the power of independent multiplication even after the original irritant disappears.

Cause of Persistence of Cell Multiplication. Why do cells continue to multiply after the original irritant disappears?

Drew²² cultivated tumor cells in addition to normal embryonic and adult cells, such as kidney epithelium in rats, *in vitro*. While tumor cells, and normal embryonic cells, upon being placed in a suitable medium, started to multiply at once, normal adult cells were delayed in their growth for from 10 to 14 days.

By adding the filtered extract of adult kidney or liver tissue which had been autolyzed for 2 hours at 37 degrees centigrade, this lag in growth was abolished. A cold extract of these tissues was not effective in abolishing the lag, indicating that when autolysis was absent, activating substances were not produced.

A cold extract of mouse carcinoma cells was even more effective than autolyzed normal tissue cells in abolishing the lag. One may infer that tumor cells in their growth produce activating substances which incite proliferation of the surrounding cells. The process of cell multiplication thus becomes automatic.

Similarity of Hydrocarbons and Biologic Substances. Kennaway and Cook²⁰ isolated a substance from the bile acids which was very similar in chemical structure to dibenzanthracene. They succeeded in producing a slight chemical change in this substance which made it more highly carcinogenic than dibenzanthracene itself.

As there is a close chemical similarity between the carcinogenic hydrocarbons and bile, hormones and vitamins, it has been suggested that some of these biologic substances may undergo a chemical change in the body which makes them carcinogenic.

In recent years interesting facts have been brought to light bearing on the development of cancer of the breast. Thus, in castrated male rats, Lacassagne²³ produced cancer of the breast by injections of theelin (female sex hormone) which differs only slightly in chemical structure from the carcinogenic hydrocarbons.

Halsey J. Bagg²⁴ carried out the following experiments:

A strain of mice was bred and the young were at once removed to prevent suckling. The mothers were immediately impregnated and the young were again removed. After 5 or 6 pregnancies the incidence of cancer of the breast in the mothers was increased from 5% to 70%. It may be assumed that by allowing the milk to stagnate in the breasts a chemical change takes place in the secretion which renders it carcinogenic or that excessive ovarian secretion may cause hormonal stimulation of the breasts.

In Adair's²⁵ study of 200 women with cancer of the breast who had borne children, only 8.5% gave a normal nursing history.

Actinic Agents. The x-ray is used so extensively for diagnostic and therapeutic purposes that one can consider it from the standpoint of an experimental agent.

Repeated slight exposures to x-rays may cause a peculiar dermatitis which may be followed by carcinoma of the skin 3 to 30 years later. Technicians and patients who have been treated over long periods for hypertrichosis, psoriasis or other skin disorders are the principal sufferers.

A single severe exposure to x-rays may be followed in a few days by a severe inflammation of the skin with necrotic changes.

Chronic ulceration ensues which may in a few months or years be followed by carcinomatous changes.

Radium may produce similar effects to the x-ray but these are seen less often due partly to the fact that the use of radium is more restricted.

In animals, epithelioma and sarcoma of the skin have been produced experimentally by x-rays. Epithelioma has also been produced by ultra-violet rays.

Some Characteristics of Malignant Cells. W. C. MacCarty²⁶ has long contended that carcinoma cells have definite microscopic characteristics such as increased nucleolar substance which distinguish them from normal epithelial cells.

W. H. Lewis²⁷ states that the malignant cells of mouse sarcoma, experimentally produced by dibenzanthracene, have cultural and cytologic characteristics which distinguish them from normal cells as shown by direct microscopic observation and by motion pictures of living cells.

Lewis says: "The production of experimental tumors which can be transplanted indefinitely from animal to animal long after all traces of the carcinogenic agents have disappeared can be explained only on the assumption that the malignant cells of such tumors are permanently altered cells which retain indefinitely the power of uncontrolled multiplication in the animal body."

As the general character of the cell is not altered, Lewis believes "malignancy is attributable to some chemical alteration of the protoplasm rather than to some chromosomal or gene alteration."

CONCLUSIONS

We believe it may be concluded that the cancerous process is practically always the same and consists essentially of an "uncontrolled multiplication" of epithelial cells.

Once started cancer continues indefinitely even after the exciting agent is removed.

The nature of the exciting agent may be different in different cancers—a biologic agent (nematode worm), a chemical agent (tar), an actinic agent (x-rays), possibly biologic substances existing normally in the body, which

undergo degeneration. The cause of the "uncontrolled multiplication" of epithelial cells characteristic of cancer lies in the occurrence of some subtle, permanent change in the cell itself.

The exact nature of this change still remains a secret which may possibly be discovered in the course of time.

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THE USE OF PITRESSIN IN COMMON DUCT OBSTRUCTION OF THE GALL-BLADDER BY BILIARY CALCULI

With a Case Report, Showing Results of X-Ray Studies in Which No Dye Was Used

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This paper, as the title suggests, is presented here to call your attention to the possibility of the use of pitressin in obstructions of the common duct, as produced by calculi.

The case reviewed proves as conclusively as one case could, that pituitary substance does produce a contraction of the muscles of the gallbladder and biliary ducts strong enough to force a small stone through the ampulla. At the same time it relieves the existing obstruction to the flow of bile, thus making it possible to better prepare such a patient for later surgical removal of the diseased gallbladder.

To better understand the mechanism of the reaction, a brief outline of the anatomy and physiology of the gallbladder and its ducts will be given. A short discussion will follow to review the causes of common duct obstruction, keeping in mind, of course, that the mechanical obstruction, as caused by stones, is the only type commendable to treatment with pitressin.

In presenting a subject of this type it is well to review briefly the anatomy of the gallbladder and biliary ducts. The intrahepatic biliary ducts unite within the substance of the liver to form two major hepatic ducts, the right and the left. These two ducts are in a variable location; at times the junction being not over 1 cm. from the exit of the liver. This duct extends downward from the liver to give off the cystic duct to the gallbladder. From this junction onward it is called the common duct. The common duct is from 7 to 8 cm. in length, and 4 to 6 mm. in diameter. It lies in the freeborder of the duodenohepatic ligament. Passing behind the descending portion of the duodenum, it continues obliquely through the wall of the duodenum, to empty into the bowel at the ampulla. This terminal end of the common duct is in close anatomic and physiologic relation to the major pancreatic duct. These ducts may join to form a common ampulla and empty into the bowel through a common orifice; less frequently, they open separately. Terminal ends of both ducts frequently have a well developed muscular arrangement, the sphincter of Oddi.

The gallbladder is a pear shaped sac, having a thin, flaccid wall and a capacity of from 30 to 50 cc. It is attached to the surface of the right lobe of the liver by a loose connective tissue network rich in lymphatics and small blood vessels. A peritoneal coat incompletely surrounds the gallbladder and is reflected over the surface of the liver, thus leaving an extraperitoneal surface which is in direct relation to the liver.

The gallbladder can be divided roughly into



Fig. 1. Flat plate of the gall bladder region showing gall bladder and common duct filled with opaque material ("Milk of Calcium" bile) and with the calculus in the common duct near the ampulla.



Fig. 2. Flat plate of the gall bladder region showing gall bladder partially empty with opaque material in the common duct. This observation was made following the first administration of pitressin.

two parts, the fundus and the neck. The fundus is a saclike portion which extends downward and forward from the neck and may extend beyond the border of the liver. The tip may be completely surrounded by a peritoneal coat. The neck of the gallbladder makes an acute angle with the fundus and points upwards, thus forming the pouch which is known as Hartmann's pouch. The cystic duct is a direct continuation of the neck and extends downward, backward, and to the left to form a z-shaped contour. Its length is approximately 4 cm. It may join the common duct at practically a right angle. Again, it may follow along the common duct for some distance and finally communicate with the latter at a very acute angle. The diameter of the cystic duct is, as a rule, the narrowest of any of the extrahepatic ducts, varying from two to four mm. Its mucosa is thrown into five to 12 folds

of crescentic arrangement, the valves of Heister, which project into the lumen of the duct. They are arranged in a spiral manner; because of this arrangement of the folds, it is believed that these special valves prevent the contents from leaving the gallbladder, or at least check a rapid passage.

The wall of the gallbladder consists of three definite layers: the serosal, the fibromuscular and the mucosal. The serosa is similar to the peritoneum. The fibromuscular consists of dense, fibrous tissue with interlacing muscle fibers which, according to Gray, are chiefly in longitudinal direction, only a few running transversely. The mucosal is covered with a layer of columnar epithelium which secretes a mucin-like substance. In the neck of the gallbladder the mucosa tends to arrange itself in folds similar to the Heisterian valves in the cystic duct.



Fig. 3. Flat plate of the gall bladder region showing almost total emptying of the gall bladder following further pitressin administration.



Fig. 4. Flat plate of the gall bladder region just previous to operation showing some opaque material still in the gall bladder.

The duct walls have a structure very similar to that of the gallbladder, the muscle fibers being arranged mostly in a circular manner. The gallbladder receives its blood supply from the cystic artery. The nerve supply is that in intimate relation to the liver, pylorus and pancreas.

Physiology. The physiologic mechanism of the gallbladder and the biliary ducts plays a role of paramount importance in the thorough understanding of the diagnosis and treatment of these organs. It is an accepted fact that bile is secreted continuously by the liver, and that during active digestion the amount secreted is far in excess of that during fasting or gastrointestinal rest. Under normal conditions, the bile passes from the bile radicles into larger ducts and finally empties into the hepatic ducts. Under varying conditions, the bile then flows through the common duct, either to be discharged into the duodenum, or to be checked by a barrier, the sphincter mechanism, to enter the gallbladder.

Physiologic considerations concern several definite functions. Ivy states that the gallbladder manifests the same reaction as the intestines. These he classified and discussed under the headings of absorption, secretions and motor activity. Others have included with these reservoir function and biliary duct pressure regulation.

According to Ivy, the human gallbladder secretes a clear, viscid, mucoid material which if drained continuously, amounts to slightly more than 20 cc. a day.

The evidence at hand proves that the gallbladder does concentrate and has the power of absorbing a relatively large amount of water. Studies of bile concentrate indicate that gallbladder bile is six to ten times more concentrated than hepatic bile, and it seems to be able to concentrate bile pigments more than it can plain bile.

Cholesterin, under normal conditions, is not absorbed from the gallbladder. In disease, however, cholesterol may be deposited in the gallbladder contents; it comes from mucosal desquamation that attends gallbladder inflammation. However, concentration seems to be the result of absorption of normal salt solution from the gallbladder at the rate of three to seven cc. per hour. Stimulation of the vagus nerve increased the rate of absorption while splanchnic stimulation decreased it.

With increase in gallbladder concentration

there is an increase in the acidity of its contents. Studies on bile obtained at the operating table show that in an acute inflammation, empyema, hydrops and chronic gallbladder disease the gallbladder does not concentrate normally. Similar results attend experiments after damaging the gallbladder. In the papillomatous gallbladder, however, and those with hypertrophied rugae, the concentrating ability is increased. Evidence favors the fact that the gallbladder functions both in health and in disease. In disease, however, rather than having fluid poured out of the lumen, the fluid is excreted into the gallbladder. This explains the failure of gallbladder visualization in disease.

From this we conclude that the normal gallbladder has the function of secretion and also that of absorption of the fluid content of the bile, thus concentrating it very much more than hepatic bile. Under abnormal circumstances, this condition is very much changed so that various abnormal substances are present in the gallbladder.

That the gallbladder has the power of contraction has been seen both on the operating table and by means of x-ray. There are two types of motor activity of the gallbladder: (1.) tonic contractions, and (2.) tonus rrythm. Tonic contractions produce a sustained rise in the gallbladder pressure lasting from five to 30 minutes. Tonus rhythm is manifested by rhythmical contractions and relaxation occurring at the rate of two to six times a minute. Pressure exerted in the tonic contractions have been as high as 21 to 31 cm. of Ringer's solution. The gallbladder is innervated by many nerve fibrils coming from the ganglion cells which are situated in the gallbladder. Motor activity is apparently under the influence of the vagus and splanchnic nerves, contractions being enhanced by weak vagus stimulation. Reflex stimulation of the central end of the vagus produces a contraction of the gallbladder, relaxation of the sphincter, contraction of the ampulla and evacuation. This is what has been termed the reciprocal innervation of the gallbladder and sphincter of Oddi. During storage of bile the sphincter contracts and the gallbladder relaxes, and during evacuation the gallbladder contracts and the sphincter relaxes. This is not adhered to in disease. Experimental evidence that this motor activity of the gall-

bladder as applied to man has produced the same conclusions.

Fear, anxiety, and pain cause some evacuation of the gallbladder which may in part be due to the action of the adrenals. Sometimes water may produce a slight reaction, too. The most complete evacuation was obtained after a meal of five egg yolks and a glass of cream. Injection of this mixture into the ileum, colon, and rectum produced no effect. There is still a great deal of uncertainty concerning the action of drugs on the gallbladder. Ivy states that pituitrin causes definite contraction while pilocarpine and physostigmine have little or no effect. Choline probably causes slight emptying, while epinephrine may possibly produce some delay in evacuation. Alcohol and atropine are also indefinite in their reaction.

There are many circumstances pointing toward the hormonal gallbladder stimulation idea. The indications are that secretin is a cholecystokenetic hormone and as such has a direct influence on gallbladder contractions. Unless this is accepted, it is most difficult to explain the gallbladder evacuation that occurs after blood transfusion in which the donor has previously partaken of a fatty meal.

From this we see that the gallbladder very definitely contracts and expels concentrated bile into the duodenum. It has been explained how these contractions may be produced experimentally by giving certain fatty foods by mouth and by the use of certain drugs. The most effective drug which produces contractions is pituitrin.

In general, the extrahepatic biliary ducts are passageways which convey bile and gallbladder contents into the duodenum. They are elastic tubes, susceptible to dilatation, and apparently possess some power of contractility. They differ from the gallbladder in that they have no power of absorption or concentration. However, in the presence of an obstruction, they secrete a mucinous fluid which is alkaline and devoid of cholesterolin, bile salts and pigments. When the gallbladder function is absent, due to either surgical removal of the gallbladder or disease which closes off the cystic duct, the ducts dilate. After cholecystectomy there is a continuous flow of bile into the duodenum, even during fasting. It appears that the removal of the gallbladder brings about a marked alteration in the bile

discharge mechanism. The anatomic arrangement of the duodenal end of the common duct is such as to afford an excellent mechanism for the prevention of ascending infections from the bowel.

It may be stated then that while the biliary ducts are more or less similar in anatomical structure to the gallbladder, they possess no power of absorption or concentration. They are able to secrete a fluid in the presence of an obstruction, and some authors believe that the ducts have the power of contracting much the same as the gallbladder.

With this brief review of the anatomy and physiology of the gallbladder and its ducts in mind, the cause of obstruction of the common duct will be considered next. Extrinsic lesions may cause compression and obstruction of the biliary passage. Judd has mentioned that a stone, embedded in the neck of the gallbladder, may compress the common duct and lead to symptoms of obstruction. Tuberculosis in other organs, and presence of a mass of calcified glands at the root of the mesentery, led to the diagnosis of obstruction of the common duct. Enlarged glands, due to Hodgkin's disease, have been known to obstruct the common duct. Secondary carcinomatous nodules may compress the common duct. Carcinoma of the head of the pancreas is by far the most frequent of extrinsic causes of biliary duct obstruction. Aneurysms of the cystic or hepatic arteries causing duct obstruction have been reported.

Of the intrinsic conditions that cause an obliteration of the bile duct, it might be well to mention congenital obliteration which is comparatively rare. Congenital cysts occasionally cause obliteration. Acute catarrhal cholangitis may cause an obstruction by the inflammation that is present. Suppurative cholangitis is also a cause of duct obstruction. Parasitic effect on the biliary duct, such as roundworm, may be an extremely uncommon cause of obstruction. Stricture of the duct may produce a narrowing of the lumen enough to cause obstruction. These may follow inflammatory processes with ulceration, or they may follow operative procedure. Benign tumors of ducts are rare, but, occasionally, a papilloma has been reported in the literature as being the cause of obstruction. Malignant tumors are uncommon. Shapiro and Lifvendahl report that in 2500 autopsies at the Cook County

Hospital in two and one-half years 12 cases of carcinoma of the extrahepatic ducts were encountered. Finally, the presence of gallstones in the gallbladder or biliary passage give us by far the greatest cause for biliary duct obstruction.

There are several varieties of gallstones and pathological processes involved in their formation that are not the same for all types. Of the many varieties, the pure cholesterol stone is the one over which there has been most controversy. Stones are usually single, not more than three-fourths of an inch in diameter, oval in shape, nodular on the surface, semi-transparent, and of a waxy consistency. At times they may be mixed with a certain amount of bile pigment and with calcium carbonate. They are definitely seen in stout, middle-aged women who are usually married and have had children. When we remember that the main function of the gallbladder is to concentrate the bile, that during pregnancy the blood cholesterol is said to be raised, that stout women who eat largely of rich foods are likely to have increased cholesterol intake, and that with advanced age such patients become more lethargic, it would seem natural to believe that the formation of these stones is metabolic in nature.

The pure pigment calcium calculi are entirely different in character and formation. The pigment may be either biliverdin or bilirubin. The biliverdin calculi are found most commonly in the gallbladder, where they appear as small, irregular, dark green or almost black, friable masses resembling small cinders, whereas the bilirubin stones are most commonly seen in the obstructed common bile duct where they form putty-like masses filling the lumen of the duct. If present in the gallbladder, they soon set up a cholecystitis and then become coated wholly or in part by a layer of cholesterol, thus supporting the fact that cholesterol is formed by the inflamed gallbladder wall. It is with the bilirubin stones that we are the most interested in connection with this discussion. When there is a long continued obstruction of the common bile duct, it is well known that the bile is greatly concentrated and forms a thick, tenacious, tar-like material, and, if any stones are present, they are always of the pure pigment variety. This concentrated bile may be opaque to x-ray. Stones of this type are not only friable but easily soluble, and are therefore

difficult to mount as permanent specimens in a liquid medium.

The third type of stones is the mixed or common, which are variable in size and shape, but on section are nearly always laminated, the layers being alternately formed of cholesterol and pigment calcium.

Case history to be considered is as follows: White male, age 52, married, American, a cement worker in the summertime and a coal dealer in the winter. Ht. five feet six inches; wt. 131 pounds. On admission to the hospital he complained of nausea and vomiting, severe epigastric pain, headache, constipation, general weakness, loss of weight, and scant highly colored urine. On October 15, 1935 the patient presented himself to determine the cause of his debility and loss of weight. General examination at that time was negative, except for several apparently infected teeth. He was advised to have x-rays taken of his teeth. On Dec. 21 he returned after having had four teeth extracted. He was much improved and had gained nine pounds in weight, but in the past three days he had had severe pain along the costal regions on both sides of the chest. He stated that he felt that the pain was caused by gas in the abdomen, because it was relieved when there was a movement of gas. He stated that these areas were so sensitive and tender that even the weight of bedclothes increased the pain. Examination at this time showed the abdomen slightly distended with gas but no abdominal tenderness, no elevation of temperature, and with tender areas along the costal margin of both sides of the chest. On Dec. 30 he was seen at home having very severe pain in the upper right quadrant. The pain was of a boring character, and the patient stated that it apparently went through to the back. It was so severe that it was not relieved until the patient was given half a grain of morphine hypodermically. At this time he was slightly nauseated but did not vomit. The skin was slightly yellow, and the cornea of the eyes showed considerable yellow discoloration. He was relieved of pain until the next afternoon, when it was necessary to repeat the morphine. After this he was free from pain until January 2 when he was seen at home complaining of very severe pain, nausea, and vomiting, and moderate abdominal tenderness in the right upper quadrant. At this time the skin was very yellow. He stated that the stools were clay-colored. On January 2 he was sent to the hospital for further study.

The family history was essentially negative. His father died at the age of 91, and mother at the age of 86. Two sisters and one brother were living and well. His wife and four children were living and well.

Except for childhood diseases he had had no severe illnesses. During the past three years he had an occasional stomach upset which he ascribed to food that did not agree with him. During these attacks he experienced slight nausea but no pain; after a few days on a light diet he was normal again. These attacks have been more frequent in the past two years, and he has had three during the last year.

Personal history was negative. He has always worked hard; he had had a very good appetite. Bowels have been normal, and urine has been normal. He always slept well. Smokes moderately, drinks coffee moderately and uses no alcohol.

Examination at the time of admission to the hospital revealed a fairly well nourished white male about 52 years of age, very jaundiced and apparently suffering from acute pain. The cornea of both eyes was quite yellow. His mouth showed several dead teeth and very definite pyorrhea pockets. His chest, heart and lungs were normal.

His abdomen was slightly distended. There was no rigidity and only slight tenderness on deep pressure over the gallbladder region. Liver was normal in size. Spleen and kidneys were not palpable. There was no tenderness in the lower part of the abdomen. On percussion, the abdomen was tympanitic throughout and the liver dullness was within the limits of normal. His extremities were negative.

Laboratory findings: On admission the urine had large quantities of bile. Blood examination showed hb. 80%; rbc—4,010,000; wc—7000, with polymorphonuclear leucocytes 64, lymphocytes, 35, monocytes 1. A second blood count was made two days after admission and found to be the same except that wc were 1000 lower. The icteric index was reported as 75 on Jan. 4, and as 100 on Jan. 5. There was some question as to the accuracy of these tests because the blood hemolized so rapidly. X-ray examination, made on the day of admission, showed an area of increased density in the region of the gallbladder, which had the appearance of one large stone within it. There was some increase in density of the shadow, apparently in the distal end, which had the appearance of a small stone in the ampulla. In the opinion of the roentgenologist this small density appeared to be thickened bile with considerable bile pigment and calculus deposit. (Fig. 1.)

Progress notes. On admission, the patient was fairly comfortable because he had received one-half grain of morphine just before leaving for the hospital. He was quite comfortable until the following afternoon, when he became extremely nauseated and vomited large quantities of yellow fluid. At 12:15 P. M., he received a second hypodermic of morphine. His general condition was gradually becoming worse. The urine became more scanty and the bowel movements, even by enema, were very poor.

On Jan. 5, his 3rd day in the hospital, it was decided that surgery would have to be resorted to if there was no improvement in the next 12 hours. At 12 o'clock on that day he received one ampule of pitressin. At four he received another, after which he was nauseated and complained of very severe pain in the epigastrium. He stated that it was of a very different character than he had had, and he felt as though his abdomen tightened up in the region of the gallbladder. At six P. M., he received morphine and atropine after which he was much more comfortable. At eight o'clock he refused the ampule of pitressin because of pain which it produced previously. He slept fairly well and on the morning of the fourth day he felt considerably better.

At this time, a second x-ray of the gallbladder was made, and it was found that the shadow previously reported as a small stone in the ampulla was completely absent, and the shadow of the cystic duct and the common duct could be definitely outlined. (Fig. 2.) On the fourth day, the patient received three ampules of pitressin at four hour intervals without any apparent discomfort. For the first time since admission to the hospital he had a normal bowel movement without the use of an enema. At this time, a third picture was taken, and it was found the gallbladder had almost emptied itself. (Fig. 3.) On the sixth day he was discharged from the hospital.

He was observed at weekly intervals and he continued to improve. The jaundice gradually faded, and on Feb. 1 he was up and about most of the time. On Feb. 14 the patient was readmitted to the hospital for surgical treatment. A right rectus incision was made and the gallbladder was found to be small with a thick wall, surrounded by adhesions. No stones could be palpated, and it was noted that the gallbladder was twisted because of adhesions attached to the upper surface. It was dissected free from its bed and removed. The cystic and common ducts were explored and no obstruction was noted. The gallbladder was filled with a thick black bile. The serosa was grayish red. The wall was thickened to five mm. and the mucosa had a granular appearance. Microscopic examination showed chronic suppurative cholecystitis. It is interesting to note that at the time of operation, while the skin, eyes and urine presented no bile, the tissues in general were quite yellow in color. The abdominal cavity was drained, and following the operation there was slightly more hemorrhage than usual but the patient made an uneventful recovery.

In conclusion: The biliary system consists anatomically of intrahepatic ducts which join to form the two major hepatic ducts, and these in turn unite to form the common duct which is joined by the cystic duct, to which the gallbladder is joined. The gallbladder and ducts all have three layers: serosa, muscular and mucous. A gallbladder has the function of secretion, absorption, motor activity, and serves as a reservoir for bile. That the gallbladder has the power of concentration is very well established. There is considerable doubt as to the contractility of the gallbladder but some men feel that it does have this function. The case presented illustrates the presence of a biliverdin stone obstructing the common duct, causing concentration of bile and bile pigments with calcium deposit to make it opaque to x-rays. The success of the preoperative treatment would seem to substantiate the fact that the gallbladder and the biliary ducts have the power of contractility.

Following the injection of pitressin we have presented definite evidence to show that the small

stone in the ampulla was dislodged and forced into the intestinal tract. Further injections of pitressin apparently caused more complete evacuation of the gallbladder by stimulating its contractions. The findings at operation would tend to substantiate the condition as found preoperatively.

While it is quite obvious that no conclusions should be drawn from the observation of one case it would appear that the use of pitressin might well be considered in the treatment of common duct obstruction by small biliary calculi.

TUBERCULOSIS SURVEY OF THE PEORIA STATE HOSPITAL

Preliminary Report

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M. KURTH, M. D.

PEORIA, ILL.

It has been quite a while since we talked to you for the first time about this Survey. It is not our own fault that we are proceeding with it in a rather slow manner, and have done only one-fourth of the work. The first tuberculin tests were made about four months ago. With the little time that we have at our disposal it is rather hard to proceed speedily.

Thus far we have tuberculin tested all the employees, x-rayed the positive reactors, tested 535 patients, and also x-rayed the positive reactors among them. For the tuberculin test we use the P. P. D. tuberculin which, as you know, was developed by the Research Committee of the National Tuberculosis Association. This tuberculin is produced in two strengths. The second strength being used after the test was negative with the first dilution. Because we wish to finish the tuberculin testing of the whole hospital population at first with the weaker dilution, as yet we have made no rechecks with the stronger tuberculin. The nurses being the most exposed to a tuberculosis infection, however, were all x-rayed irrespective of the results of their tuberculin test.

As you know, it has been our practice in this hospital to x-ray the chests of all the nurses at least every six months in order that tuberculous lesions may be detected among them should such

occur. You may remember that a few months ago we had a nurse here in whom far advanced tuberculosis had to be diagnosed, when five months previously she had a negative radiogram. In this particular case the sputum was positive for the tubercle bacilli. Therefore, the diagnosis could not even be questioned. Following this experience we had to recommend that the condition of the nurses be checked by x-ray at least every three months instead of six as previously. Due to the shortage of personnel, however, this recommendation is not being carried out. Now that we have the young student nurses with us, it would be of paramount importance in safeguarding their health if they would be x-rayed before they are assigned to their training and then two months later, before they leave here.

It is of interest to know that among the 307 employees tuberculin tested, 161 or 52.44% have shown a positive reaction. If we break this group down, we find that among the 32 nurses tested 27 or 84.37% gave a positive test. This is an exceedingly high percentage. Among the 223 attendants tested, 112 or 50.20% have given a positive reaction. This percentage would correspond with that of the population in general, we believe. We haven't grouped the doctors separately because they would represent a very small group. We have tested 39 employees not in active contact with patients and among these 23, or close to 59% showed a positive reaction. None in the group of employees, however, showed signs of active tuberculosis on the radiogram.

We have tuberculin tested 535 patients; of these 389 or 72.71% had a positive reaction. That is a rather high percentage, particularly considering the fact that we have tested thus far only with first strength tuberculin. When we will test the remainder with the second strength of tuberculin we are afraid we will get a few more positive reactors among them. Of the 256 males tested, 179 or close to 70%, and among the 279 females, 210 or slightly over 75% were positive.

We have x-rayed all the positive reactors, all the nurses and doctors irrespective of the result of their tuberculin test, and all the patients on both tuberculosis wards on whom we did not perform the tuberculin test, because it was expected that they have tuberculosis. On routine examinations flat celluloid films were taken. At the time of the reading of the films a few of

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them were found to be poor from a technical point of view. These had to be retaken. Some of the films showed questionable signs of tuberculosis. These patients were rechecked by stereoscopic films. Due to the interest aroused by this survey, a number of chest films were ordered from the various wards and these films were also included in our study. All told thus far, 521 x-ray examinations were made.

As stated before, no tuberculosis was diagnosed either among the nurses or the employees. One case of minimal tuberculosis with positive sputum, however, was found among the medical staff.

Of the 32 patients on the *female tuberculosis ward*, five or 15.62%, and of the 24 patients on the *male tuberculosis ward*, four or 16.66% had a *normal chest x-ray*. One of the latter died on the ward of a terminal hemoptysis and was buried before his x-ray was studied. Permission for post-mortem examination could not be obtained and the diagnosis on his death certificate was given as pulmonary tuberculosis.

For practical purposes we thought it advisable to proceed with our study from ward to ward, starting with the wards where the sickest patients are, because we expected to find the relatively largest number of tuberculous patients on these wards. Thus far we have finished our study in Cottage 2-C (male) and Cottage 7-C (female). Our findings were as follows.

Of the 153 male patients all were tuberculin tested and 119 or 77.77% gave a positive reaction. Of the 82 female patients 81 were tested and of these 62, or 76.54% gave a positive test.

Of the 119 male positive reactors 23, or 19.33% were found to have tuberculosis on x-ray examination and in six or 5.04% the reading of the films warranted further observation before they could be declared free from active tuberculosis. In other words 15.03% of the sickest patients have active tuberculosis and an additional 3.90% show signs pointing towards the disease.

Of the 62 female positive reactors nine, or 14.51% were found to have tuberculosis by the radiograms, and an additional three, or close to 5% were found to be suspects.

Of the 23 tuberculous among the males three, or slightly over 13%, and of the nine females two, or 22.22% had the disease in the far advanced stage; and one had a healed hemotogen-

ous spread. The others were in the minimal stage.

We were naturally interested to learn where these patients who have been discovered in the course of the survey have acquired their disease. Accordingly we studied the length of their stay in the institution and on the wards.

Of the three far advanced male patients one was an inmate for over 12, one for over 4½ and one for 1½ years. Of the 20 minimal cases two were inmates of the institution for one to two years, five for two to five years, eight for five to ten years, four for 10 to 20 years, and one for over 29 years. Of the three far advanced cases one was on this ward for 1½ months and the other two for over one year and four months. Of the 20 minimal cases one was on the ward close to five months, five from seven months to one year, seven for one to two years, seven for two to five years, and of the two far advanced female patients one was an inmate for over 15 years and one for over eight months. The case of hematogenous tuberculosis was at the institution for close to four years. Of the six female minimal cases one was an inmate for close to three months, one for 10½ months, one for slightly over one year, one for over two years, one over 10 years, and one for over 14 years. The two far advanced cases spent on the ward six and 10 months respectively. Of the six minimal cases two were on the ward for slightly over one year, two for six to seven months, and two for 3½ to 4½ months.

Since the Survey started three male and seven female patients were found to have tuberculosis after they were transferred to the hospital division. Of these the condition of one was so far advanced (a case of bilateral extensive tuberculosis with partial spontaneous pneumothorax) that the patient died a few days after admission. Another case was transferred to the hospital because he presented a difficult feeding problem. When a radiogram was taken it revealed far advanced extensive bilateral tuberculosis with spontaneous hydropneumothorax on the right.

Thus far we have found 89 cases of tuberculosis. Of these, we think, in 15 or close to 17%, artificial pneumothorax; in four, or close to 4.5% phrenicectomy (patients over 40 years old); and in one a thorcoplasty (a patient in whom in a tuberculosis sanatorium a phrenicectomy was performed after unsuccessful attempts for arti-

ficial pneumothorax) are indicated. In addition we have found six cases in whom a bronchoscopy is indicated to clear up the diagnosis on definite pathological changes which did not seem to be to us of tuberculous nature.

Sputum examinations were made on the specimens of 46 patients and of these tubercle bacilli were found in 12 cases. The sputum specimen of the one physician with minimal tuberculosis was also positive.

Discussion. Tuberculosis prevention in a medical institution starts with the protection of the institutional personnel. Such a protection has a twofold purpose; it prevents the spread of the disease from the tuberculous patients to the healthy personnel and in turn it protects the patients from an infection on the part of tuberculous attendants. Experience of others as well as our own has proved that, due to their intimate contact with tuberculous patients, nurses are only too prone to develop tuberculosis. It was also shown by others as well as by this survey that a checkup by a radiogram in six month intervals is not satisfactory for such protection, and that such a checkup at intervals of three months will be more adequate. Personnel in less close contact with the patients can be adequately protected by a radiographic checkup every six months and the others by a checkup once a year.

It is generally known that tuberculosis is an exceedingly common disease among mental patients and that the latter frequently die of tuberculosis. According to the statistics of our own institution since 1920, annually, about 10% of the deaths occurring here is due to tuberculosis. Our experience in this survey thus far, however, would prove that the diagnosis of tuberculosis was not arrived at in a careful and adequate manner and we are inclined to believe that this percentage of deaths is much lower than it is in actuality.

Not having finished our study as yet we are in no position to state the percentage of tuberculosis infection in our patient population as determined by the tuberculin test, or the actual number and percentage of patients suffering from active pulmonary tuberculosis. We are safe in stating, however, on the basis of the facts brought out in this study that around 15 per cent of the patients in need of "hospital" care are suffering from active pulmonary tuberculosis. This fact coupled with the other that at the

time of this writing we had already found 89 cases of active tuberculosis and that we may safely expect that by the time this survey will be concluded this number will be considerably increased, emphasizes the magnitude and severity of the problem we have to face in dealing with tuberculosis in our institution.

It should also be emphasized here that it is over 56 years since the fact has been established beyond the shadow of doubt, that tuberculosis is an infectious disease. Yet in our practice we do not seem to take cognizance of this fact. How differently we act when a case of typhoid, diphtheria or any of the other acute infectious diseases is discovered among our patients. Don't we extend every effort to prevent the disease from spreading to other patients? Why do we take a different attitude in regard to tuberculosis? The fact that the incubation period in tuberculosis, as a rule, is longer than that of all the other contagious diseases, cannot be held as valid justification of our present indifference. Not until a medical institution has taken the same stand in reference to tuberculosis as it takes in regard to other infectious diseases, has it fulfilled its duty towards its patients in protecting them from becoming infected with tuberculosis within its own walls.

From the length of stay in the institution of the five far advanced cases found on the two hospital wards surveyed, it is safe to conclude that at least three have developed the disease while they were patients here. There is also a strong possibility that the remaining two (one staying in the institution for one and a half years, and the other for over eight months) have also developed their disease in our hospital. Should this, however, not have been the case, we may be certain in assuming that their disease reached the far advanced stage here. The length of stay of the minimal cases on the two wards together with that of the far advanced cases would tend to prove that at least the majority of the minimal cases have acquired the disease from their fellow patients with the advanced stage of the disease.

Once again it has been proved by this survey what we know only too well from other similar studies that in the diagnosis of tuberculosis we cannot rely on physical examinations, but that we have to resort to the chest radiogram. Only on the basis of the radiogram are we in a posi-

tion to state that an individual has or does not have tuberculosis.

A number of important questions have been raised by this survey:

1. What should be done with the tuberculous patients after they have been diagnosed? It is obvious that they will have to be segregated from the non-tuberculous patients. By detecting tuberculous patients we do not add new patients to the patient population, and with little thought and effort it should be a relatively easy problem to find a large enough building on the grounds where these patients could be adequately housed. With this arrangement care will have to be taken that the positive sputum cases be segregated from the negative ones.

The practice in tuberculosis wards which have their own dishes kept on the wards and washed there, and where the nurses and attendants use contagion technique, as is already done on the present small wards, shall obviously be continued in the newly assigned building.

2. How can the spread of the disease be prevented? a. It can readily be expected that some of the patients have tuberculosis at the time they are admitted to the institution. These, however, can be detected only if tuberculin testing and chest x-raying the positive reactors is made a routine procedure on admission; b. The same procedure of retesting the positive reactors should be repeated in six month intervals on all the "hospital" patients and once a year on all the ambulant patients. The negative reactors shall be tuberculin tested annually and x-rayed at the time they are found positive.

Eternal vigilance is the price we have to pay if we want to remain free of infectious diseases. We cannot shirk our duty to pay this price when tuberculosis is concerned.

3. What should be done with the tuberculous patients after they are discovered and segregated?

It is our opinion that they be subjected to the same type of treatment as the non-psychiatric tuberculous patients are in our well conducted sanatoria. Collapse therapy should be instituted whenever indicated irrespective of the patient's psychiatric status, because by collapse measures the sputum positive, and therefore infectious patients, can be converted in the shortest possible time into sputum negative and therefore non-infectious status. In this way these patients will become harmless as far as the spread of tubercu-

losis is concerned and will cease to constitute a menace to their fellow patients or home environment should they be paroled and return home.

We may expect that some of these patients will present a difficult problem when proper treatment, particularly collapse therapy, will be instituted. But no doubt by proper attention and care it will be possible to overcome the difficulties presented by individual cases.

4. Is the hospital provided for the proper care of its tuberculous patients?

As stated before, the facilities for the housing and segregation of these patients can be readily made available because the size of the hospital population will not be increased. There is, however, urgent need for the improvement in their medical, laboratory and nursing care. It can be hardly expected that with the present small staffs justice be done to the responsibilities facing us. Although every effort was made on the part of the managing officer and the two physicians who were assigned to this survey (in addition to their other duties) together with the laboratory and x-ray technician to speed along the work, yet after four months' effort not even the tuberculin testing could be finished. Such a result speaks eloquently in itself of the lack of personnel for this work. It is urgently needed that at least one of the physicians be immediately relieved from his other duties, so that he can devote all of his time to tuberculin testing.

One physician could complete this work with the assistance of one to two nurses readily within one to two weeks.

It is also of prime importance that all the tuberculous patients be placed under the charge of a physician versed in the diagnosis and treatment of tuberculosis, who could devote his full time to this problem.

Our experience has also proved that one x-ray technician cannot carry the burden of the work to take the many radiograms necessary for such a study and later for the diagnosis of new cases. It is to the greatest credit of Miss Peterson, our x-ray technician, that in her enthusiasm for our study she has taken care of the radiographic work to a much greater extent than one could have expected. But even so it would take at least about one more year to complete this study, should she not receive any additional help. It is therefore imperative that a second x-ray technician be employed by the hospital.

Sputum examinations were hardly made in the course of this study, simply because one technician has to perform the work both in the clinical and x-ray laboratories. Yet sputum examinations are essential in the segregation of infectious cases.

The reading of the radiograms is done at present by the senior author of this report, who is not a member of the hospital staff. It cannot be expected, however, that he will be able to devote his time indefinitely to this problem. It will become necessary, therefore, that a radiologist, well versed in chest work, be added to the medical staff.

The care of the tuberculous, no doubt, will require additional nursing service, and, therefore, nurses will have to be added to our staff. Their number, however, will have to be increased gradually as experience will show the needs.

We are only too keenly aware of the fact that the improvements here suggested represent considerable financial expense. But we are also convinced that buildings, no matter how well planned and constructed, and domiciliary care of patients do not constitute a hospital. Properly qualified and adequately manned professional staffs are essential in building up a medical institution for the proper care of patients.

For years great concern has been expressed throughout the country at the ever increasing number of mentally ill patients and the ever increasing financial burden they represent to our communities and tax payers. We are firmly convinced that by increased professional attendance many of the patients receiving at present only domiciliary care, could have their condition so improved that they may be safely returned to their homes to the care of their own families and thereby lessen the burden on the tax paying public. By improving the professional care in our institution the turnover of the patient population could be readily increased so that the present hospital facilities could take care of a larger number of patients in a given length of time. We feel, therefore, that while our recommendations entail some financial expense, this expense would be more than repaid by the earlier and better rehabilitation of the patients, and thereby by the better utilization of the present hospital facilities.

CONCLUSIONS

1. Tuberculosis is the cause of death of a considerably large number of mentally ill patients.
2. Many of these patients acquire the disease while they are inmates of our State Hospitals.
3. Tuberculosis, therefore, constitutes a major problem with which our mental institutions have to cope.
4. Tuberculin testing and radiograms are essential in the diagnosis of tuberculosis.
5. Patients admitted to mental institutions should be subjected routinely to a tuberculin test. The positive reactors should be x-rayed.
6. Thereafter negative reacting patients under "hospital" care should be retested every six months and the positive reactors re-x-rayed every six months.
7. The nursing and medical personnel should be x-rayed every three months.
8. Mentally ill tuberculous patients should be subjected to proper and adequate "sanatorium" care including collapse therapy.

RECOMMENDATIONS

To carry out the above program it is recommended that this hospital: 1. Assign one of its physicians and one or two nurses to complete the tuberculin testing commenced with this survey.

2. Segregate immediately all the patients found to be suffering from tuberculosis, and that in this group the positive sputum cases be segregated from the negative cases.

3. Assign one physician for the exclusive care of the tuberculous.

4. Assign an adequate number of nurses for the care of the tuberculous.

5. Institute collapse therapy for these patients whenever such treatment is indicated, irrespective of the patient's psychopathic status.

6. Add one more x-ray and one clinical laboratory technician to its staff.

7. Add a radiologist to the medical staff.

We wish to express our sincere thanks to Dr. Walter Baer, Managing Officer, for his interest and cooperation shown in this survey and to Miss E. Peterson, x-ray technician for the enthusiasm with which she carried her heavy burden in x-raying the patients surveyed.

SYNTHETIC MALE HORMONE IN THE TREATMENT OF PROSTATIC HYPERTROPHY

FRENCH S. CARY, M. D., F. A. C. S.

CHICAGO

Diseases of the prostate have been recognized from time immemorial, if we can believe Sir Everard Home, who surmised that the enlargement of the prostate gland which so frequently occurs in men past fifty years of age is "alluded to in the beautiful description of the natural decay of the body in the Bible, in the book of Ecclesiastes, the 12th chapter, the 6th verse, where it is written, 'or the pitcher be broken at the fountain, or the wheel broken at the cistern,' which expresses the two principal effects of the disease, the involuntary passing of the urine, and the total stoppage."

In the sixteenth century Nicolo Massa, a physician of Venice, who died in 1563, made brief reference to the prostate, and Riolanus, about the middle of the sixteenth century, was the first to suggest obstruction at the neck of the bladder due to swelling of the prostate. Among the first to operate by the perineal route was Sir William Blizard, who before 1806 performed several perineal prostatotomies for enlargement without any calculous formation. Early in the nineteenth century Sir William Ferguson employed perineal prostatotomy. Guthrie, in 1834, was the first to operate under the name of "division of the bar at the neck of the bladder." He used a catheter carrying a concealed blade. Mercier, who was a well known prostatic surgeon, devised special instruments in 1837 called "prostatotome and prostatectome." H. H. Young's punch instrument developed later was a modern refinement of these earlier instruments, and later his galvanocaustic apparatus introduced at John Hopkins University, the great advantage being that it was nearly impossible for the prostate to slip away from the beak of the instrument, and thus the risk of burning the bladder instead of the hypertrophied gland was minimized.

Belfield in October, 1886, did his first suprapubic operation for removal of the prostate, but priority in bringing this procedure before the profession has been rightly attributed to McGill of Leeds. Freyer makes claim to being the first to totally remove the prostate by the suprapubic route, but Guiteras' claim that Fuller of New

York was the first to do a "total" suprapubic prostatectomy is apparently based on the best of grounds.

Prostatectomy by the perineal route followed closely on the operation for prostatotomy, and preceded by a number of years McGill's suprapubic method; Ferguson (1901), Zuckerkandl (1889), Albarran (1901), Murphy (1902), Young (1903), Senn (1903) and many other prominent surgeons. Space does not permit me to describe these operations with which you are all so familiar. This brings us up to the resection by the transurethral method, which, during the past few years, has been practised by many surgeons, some with good and some with poor results. During the last few years the possibilities of clinical application of glandular therapy in prostatic hypertrophy has been brought to our attention by the results of animal experimentation along these lines, which has been carried on in Europe and in this country.

The stimulus for this clinical investigation was the recent availability of a pure "male hormone," which was obtained synthetically in 1936 and which can be manufactured now in unlimited amounts, independent of animal sources, such as glands or body fluids like urine. This synthesis, naturally, was made possible only after elucidation of the chemical structure of the hormone which, on the other hand, depended on the isolation of a pure crystalline substance with definite hormone-like properties, from the gland or any other part of the body or its excretion fluid, the urine. The pace-maker and guide, without which this evolution would be incomprehensible, was a reliable, quantitative test for determining the effectiveness of the various extracts or fractions, or purified concentrates, which had to be investigated. Such test was not devised before 1929 when Koch and Gallagher¹ presented their method of measuring the effect upon the size of the capon's comb. Thus, not more than eight years were required for all the steps leading to our present chemical knowledge of the male hormone.

The first crystalline product with marked effectiveness upon the capon's comb, as well as on the accessory sex organs of castrated mammals, was isolated by Butenandt² in 1931 from human urine. The compound later (1934) was named "androsterone," when further investigation shed some light on its structure and on its

chemical relationship to cholesterol, the formula of which had been established, not long before, by the complementary work of various authors. Very soon after, androsterone was synthetically prepared by degradation of cholesterol by Ruzicka³ and his co-workers.

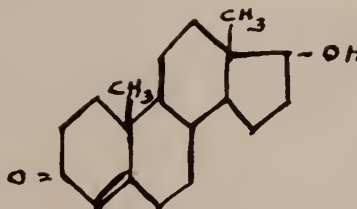
However, even before this remarkable scientific progress, represented by the synthesis of a substance producing male characteristics in castrated animals, could receive due appreciation by the contemporaries, new investigations led to the recognition of an additional physiologically active substance which was found in urine, and, finally, to a third which was isolated from testis tissue by David⁴ and his associates in 1935. This latter compound, being synthesized from cholesterol shortly after its isolation by Ruzicka and others, and designated "testosterone," differs from androsterone in various aspects, and according to our present knowledge, is the only, or the most important, hormone secreted by the testes. Testosterone, in contrast to androsterone, is more stable in the presence of alkali and oxidizing agents, and this difference, besides a striking deviation in potency observed even before urinary and testicular concentrated extracts were compared on biological objects, led the way to its chemical discovery and the elucidation of its structure.

Testosterone, like androsterone and also dehydroandrosterone, which was the second active substance isolated from urine and other substances, which was synthesized in the meantime and found to possess more or less the characteristic action of male hormones, belongs to the so-called sterols. This means compounds structurally characterized by a ring system consisting of 3 benzol rings, arranged in a manner known from phenanthrene and a ring with only 5 carbon atoms. This chemical skeleton, the biological importance of which has become more and more evident, being not only the basic structure of cholesterol, ergosterol and vitamin D, but also of the bile acids, the digitalis glucosides and the female sex hormones, estrogenic substances as well as progesterone, offers, of course, manifold possibilities of structural differences, of isomers, of hydration, of side chains, etc., so that the multitude of biologically active and widely different substances can be explained.

The formula of all "androgens"—a name accepted to designate substances possessing mascu-

linizing activity⁶—is similar to the formula of testoseterone, which is shown in the following paragraph. The chemical variety of the androgens is due to the interchange of the hydroxyl- and keto-groups, and especially to the presence or absence, respectively, of a double bond between two carbon atoms of the first or, as is the case with special isomers, of the second benzol ring. The position of the double linkage, as well as that of the keto- and hydroxyl-groups, can also be recognized in the formula given for testosterone. For those interested in further details regarding the chemical composition of the sex hormones, and especially the relationship between the female and the male hormones, the recently published work of Kurzrok (Endocrines in Obstetrics and Gynecology) is recommended. In this book a short but comprehensive description is given of each.

The systematic, scientific nomenclature of the androgens is based on the above mentioned double bond. Substances, containing the completely hydrogenated "cyclopentenophenanthrene," that is the sterol skeleton without the double bond, are called "androstan" derivatives. Substances, with one double link in this ring system, belong to the "androstene" series. Further suffixes, in the form of the syllables "ol" or "one," respectively, signify, with the aid of numbers given to each carbon atom, the isomeric configuration and the position of the hydroxyl- and the keto-groups. Thus, androsterone, belonging to the androstan series is: 3, 17 androstan-ol-one. Testosterone, belonging to the androstene series is: 17, 3 androstene-ol-one.⁷



Formula 1

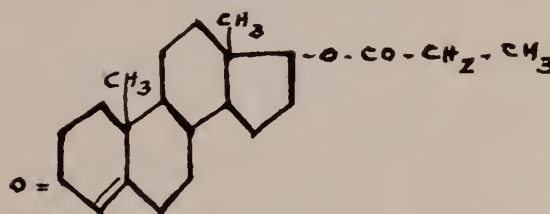
As seen from this formula, testosterone has the quality of an alcohol and is, therefore, able to form esters. Such esters have been prepared by Miescher and associates,⁸ and their biological examination showed, principally, the same effect. But the effect varied in regard to the intensity and duration of action. Some of the testosterone esters, such as the formate, acetate, propionate, etc., produce in both tests a more prolonged and

REPORT OF CASES TREATED SINCE AUGUST, 1936

Patient	Age	Type	Residual Urine	2nd Series			Cystoscopy	Nocturnal Frequency	Perandren Injections	Results 1 Month	Residual Urine	Cystos- copy	Nocturnal Frequency	Results 2nd Month	Results 1 Year
				Perandren Injections	Results 1 Month	Perandren Injections									
C. R. R. 1	67	Prostate Hyp.	50 cc.	6	Improved	6	Small	3-4	6	Improved	10 cc.	Med. Bar Smaller	2	Good	Excellent
H. S. S. 2	62	Prostate Hyp.	80 cc.	6	Improved	6	Middle L. Lateral	3-4	6	Improved	5 cc.	Both Lobes Smaller	0	Good	Excellent
W. F. N. 3	64	Prostate Hyp.	90 cc.	6	Slight	6	Hyper Both Lat. Middle	4-5	6	Slight	20 cc.	All 3 Lobes Smaller	1	Good	Fair
C. H. McC. 4	55	Prostate Hyp.	25 cc.	6	Improved	6	Slight Hyper.	1-2	6	Improved	0	Normal	0	Good	Excellent
E. R. W. 5	50	Prostatitis	0	6	None	6	—	0	6	None	0	—	0	Slight	—
M. B. W. 6	53	Prostate	10 cc.	6	Slight	6	Median Bar	1	6	Slight	0	Normal	0	Good	—
W. R. A. 7	55	Prostate	20 cc.	6	Improved	6	Both Lat. Slight	2	6	Improved	0	Both Laterals Smaller	0	Good	—
C. H. W. 8	72	Prostate	90 cc.	6	Slight	6	Hyper. Both Lat. Middle	6-8	6	Slight	50 cc.	—	4	Died Cardiac Failure	—
W. F. S. 9	40	Prostatitis	0	6	Improved	6	—	0	6	Improved	0	—	0	Good	—
J. G. 10	45	Prostatitis	0	6	Improved	6	—	0	6	Improved	0	—	0	Good	—
D. D. 11	54	Prostate Hyp.	25 cc.	6	Slight	6	Small Median Lobe	2	6	Slight	0	—	0	Good	—
H. A. 12	40	Prostatitis	0	6	Slight	6	—	0	6	Slight	0	—	0	Marked Improve- ment	—
J. A. 13	48	Prostate Hyp.	15 cc.	6	Improved	6	Small Middle Lobe	1	6	Improved	0	No Change	0	Good	—
G. L. H. 14	58	Prostate Hyp.	10 cc.	6	Improved	6	Small Lateral Hyp.	1	6	Improved	0	Smaller	0	Good	—
J. S. 15	43	Prostatitis	15 cc.	6	Improved	6	No Hyper.	1	6	Improved	—	—	—	—	—
C. R. W. 16	60	Prostate Hyp.	25 cc.	6	Improved	6	Both Lat. E. Small Median	2	6	Improved	5 cc.	Slight Change	0	Good	—

W. H. McK. 17	61	Prostate Hyp.	20 cc.	L. Lateral Small	1	6	Improved	6	0	—	0	Good	—
H. H. B. 18	45	Prostatitis	0	Median	0	6	Improved	6	0	—	0	Good	—
J. E. B. 19	70	Prostate Hyp.	30 cc.	Both Lat. Enlarged	3	6	Improved	6	15 cc.	Refused Cys.	1	Good	—
E. C. C. 20	50	Prostate Hyp.	15 cc.	Small Med. Slight	1	6	Improved	6	0	—	0	Good	—
H. B. C. 21	70	Prostate Hyp.	40 cc.	Both Hypm. B. Lat.	3	6	Improvement	6	10 cc.	No Change	1	Good	Good
J. C. E. 22	44	Prostatitis	0	—	0	6	Only Slight Improvement	—	—	—	—	—	—
J. H. 23	72	Prostate Hyp.	50 cc.	Refused	5	6	Only Slight Improvement	—	—	Patient left city.	—	—	—
W. H. E. 24	60	Prostate Hyp.	60 cc.	Both Lateral Lobes	3	6	Improvement Slight	6	40 cc.	—	2	Some Improve- ment	—
T. S. 25	48	Prostatitis	—	—	—	6	None	—	—	—	—	—	—
H. L. W. 26	61	Prostate Hyp.	20 cc.	Both Laterals Large	2	6	None	—	—	—	—	—	Patient refused further treatment.

more pronounced response than pure testosterone. In other words, the esters cause a greater increase in the size of the comb and a greater increase in the weight of the secondary sex organs of the rat, and the maximum of these effects is attained later than is the case with free testosterone given in the same doses. Thus, the total effect obtained is relatively greater. Other esters, such as testosterone butyrate or palmitate, show this remarkable quantitative modification, either only or to a much more pronounced degree in the rat, while in the case of the classic test on the capon, the intensification is less noticeable. For clinical use, testosterone propionate, among the various esters, was chosen for its most pronounced as well as persistent action.^{9, 10}



Formula 2

Prostatic hypertrophy can no longer be regarded as an independent entity. The inter-relationship between the testes, the anterior pituitary gland and the secondary sex organs are now clearly recognized, and we know that changes in one of these three are inevitably conveyed to the other members. Then if this is true, is it not possible that benign prostatic hypertrophy may be due to an endocrine imbalance.

REPORT OF CASES TREATED SINCE AUGUST, 1936

The cases are tabulated in order that the number (26) can be reviewed in the preceding chart which shows the changes after treatment of the most common symptoms and findings in these types of cases. In this series of cases only six failed to get any appreciable results. Most of the cases under 50 years of age had prostatitis, and one case was that of prostatic hypertrophy, 72 years of age, that had a serious cardiac complication, and who died during his second series of injections of perandren from cardiac failure. The patient, No. 8 on the chart, had come to me 20 years before and I had removed eight calculi from his bladder by litholapaxy. One case, a man 40 years of age, who had been under treatment and observation by me for the past five years and who had masturbated since 15 years

of age, had a definite psychoneurosis, and complained of total loss of sex desire and no erections. Examination by endoscope showed relaxed ejaculatory ducts, marked excitability of the posterior urethra, and by rectal examination the prostate was slightly enlarged but soft and boggy. Treatment given, while satisfactory from relief of symptoms in the urinary tract, his psychoneurosis still remained. In August, 1936, treatment with perandren was begun, giving 5 mg. every fourth day for 12 doses, and then a rest period of one month and a second series of perandren begun. The change in the mental attitude of this patient was greatly improved and his prostate per rectum was firm, normal in size and appreciably sensitive for the first time since coming for treatment. Slight erections began to occur at intervals and increased in duration and frequency. Treatments were continued twice monthly up to the present time, and the patient is much encouraged.

Testosterone propionate (Perandren) has been used in all of these cases in doses of 5 mg. and in every case the general tone of the patient was improved.

Discussion

The chemical contributions to biology were the stimulus and the means of bringing about new physiological investigations. Nevertheless, the physiological problems concerning the male hormone, its function in normal and pathological conditions, are too numerous and certainly too complicated to be solved in a short time. Many chief, basic questions, such as the uncertainty as to whether testosterone is the only hormone secreted by the testis, the relation of other hormones (estrogen, pituitary hormones, etc.), the influence of testosterone on the testis itself, recently discussed by Hamilton,¹¹ and many other problems, still need further elucidation.

Although testosterone propionate, or any other testosterone ester, has not yet been found in or isolated from the body, it has been demonstrated that it has a greater potency than the testosterone definitely isolated from the testis.^{9, 10, 12} Thus, it is also an open question as to whether the organic acids can be identified with the so-called x-fraction of the testis which, as shown by David,¹³ has an activating effect on the castrated rat. The oily solution of the propionic ester—

testosterone, as well as its esters, is insoluble in water—is, according to the review read by Ehrenstein,¹² 12 to 17 times stronger than the oily solution of free testosterone. Its effect on the capon's comb and on the secondary sex organs in castrated rats is qualitatively the same, that is an increase in the weight of the seminal vesicles and the prostate gland is seen in those castrated animals which regularly would show atrophied organs.

Hamilton,¹⁴ using perandren, has shown that in monkeys, in which cryptorchidism exists until puberty, it causes a descent of the testes after fourteen days. The effect of perandren in sexual underdevelopment has also been studied by Hamilton,¹⁵ in the case of a 27 year old male, with remarkable results in the development of the sexual apparatus—the penis, the scrotum and the testes. Penial growth and the capacity of erections were also studied after the injection of the male hormone in monkeys, as well as in human beings. The author stated that the testosterone propionate used "produced growth, maintenance and function of the male reproductive tract."

Before final conclusions can be drawn in regard to the indications, dosage and method of treatment with this product, a long period of careful observations will be necessary, as already pointed out in the above mentioned papers. Its use in prostatic hypertrophy, a disease of age and involutionary period in man's life, is near at hand although the etiology of this disease and its connection with the functions are under contradictory discussion.

Zuckerman¹⁶ has artificially produced prostatic hypertrophy in monkeys by injecting the follicular hormones. These prostatic effects of oestrone were suppressed by injections of substances with male activities. Testosterone propionate was shown to be the most powerful in this direction compared with testosterone and androstandiol (which, according to the explanation of the chemical nomenclature, is an androstan derivative with two hydroxyl groups).

Clinical improvement in a large percentage of patients with benign prostatic hypertrophy has been observed by Day and co-workers¹⁷ and perandren was injected intramuscularly in more than 40 patients. The results are claimed to be very striking in some instances.

Recently, in a letter to the Editor of the *British Medical Journal*, in which he reported re-

sults exactly along the same lines as my own observations, Dowling¹⁸ presented a case of prostatic hypertrophy treated with testosterone propionate.

In a paper recently published in the *Presse Medicale*, France, by LaRoche, Marsan, Bompard et Corcos, these French authors obtained the same encouraging results by using the acetate of testosterone as I have in this series of cases, except that these French patients were treated with the acetate instead of propionate. The French authors claim that they have seen tenesmus of the vesicle and of the rectum, accompanied by symptoms radiating to the urethra. In my series of cases I have not had any such complications, even in the cases in which 25 mg. of perandren at each injection was given.

CONCLUSIONS

1. Testosterone certainly has a definite place in the treatment of early benign hyperthrophy of the prostate, in a large percentage of cases.

2. In inoperable cases due to some serious physical disability, early prostatism should be treated with testosterone (perandren) and at least given a good fair trial.

3. Larger doses (25 mg.-10 mg.) have been used in a few cases, but I can see no advantage over the 5 mg. dose.

4. In cases of sex hormone deficiency testosterone will prove of great value.

I want to express my thanks to the Ciba Pharmaceutical Products, Inc., for providing me with the material which I have used in this work.

30 N. Michigan Avenue.

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CONGENITAL ATRESIA OF THE UPPER VAGINA WITH RETAINED MENSES

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Gynatresia or closure of some portion of the genital tract is a rather uncommon condition and but briefly mentioned in most textbooks. Vulval atresia due to agglutinations of the labia minora is not infrequent in infants and girls of preschool age. Vakar in 1930 and Nowlin and Adams in 1936 reported cases of atresia vulvae. The condition seemed to be acquired rather than congenital; certain of the cases were asymptomatic and others produced symptoms of urinary obstruction.

A more frequent site of closure of the genital tract is in the lower portion of the vaginal canal, and the obstruction may be unassociated with symptoms until the onset of menstruation. Brown studied 50 cases of congenital retention of menses and in 41 instances the obstructive membrane was situated at the junction of the vulva and vagina. Less frequently the obstructing membrane is higher in the vagina or perhaps in the cervix.

At the vaginal orifice two types of membranes may produce obstruction, 1, a membrane above a normal hymen, and, 2, an imperforate hymen. Taussig feels that the thickness of the atresic membrane and the absence of agglutinations higher up suggest that the condition is not a result of infectious agglutination but rather an overgrowth of hymenal connective tissue.

There is a variety of opinion as to the etiology of gynatresia. Nagel and Frank believe most, if not all, atresias and stenoses are acquired and are due to injuries or inflammations occurring

in postnatal life. Cases of gynatresia of the acquired type may result from infectious diseases, puerperal infections and lacerations, trauma, senile changes and mechanical occlusion from within or without the genital tract.

The most common congenital obstruction of the vagina is generally regarded as an imperforate hymen. Complete absence of the vagina

menses observed in a girl thirteen years of age. There was apparently no other anomaly of the genital tract. Jackson in 1928 reported a case with similar findings. Figure I is a drawing of the structures in the pelvis as they appeared at the time of the last operation. Figure II is a photograph taken after restoration of the vagina.

CASE REPORT

L. S., a girl aged 13½ years was first seen by us December 29, 1937, because of cramping pains in the lower abdomen. The father and mother and two other girls in the family were alive and well. The mother had had only the three pregnancies. The family history was essentially negative. There were no anomalies in living members of the immediate family.

The patient was born at term, delivered normally, weighed eight pounds at birth and was a well baby. She teathed at 10 months, sat up at seven months and walked at 15 months. She had measles, whooping cough and chicken pox. At 15 months of age she was reported to have had typhoid fever and a severe "bowel impaction." At five years of age she had pneumonia and at nine years of age scarlet fever. She had never menstruated.

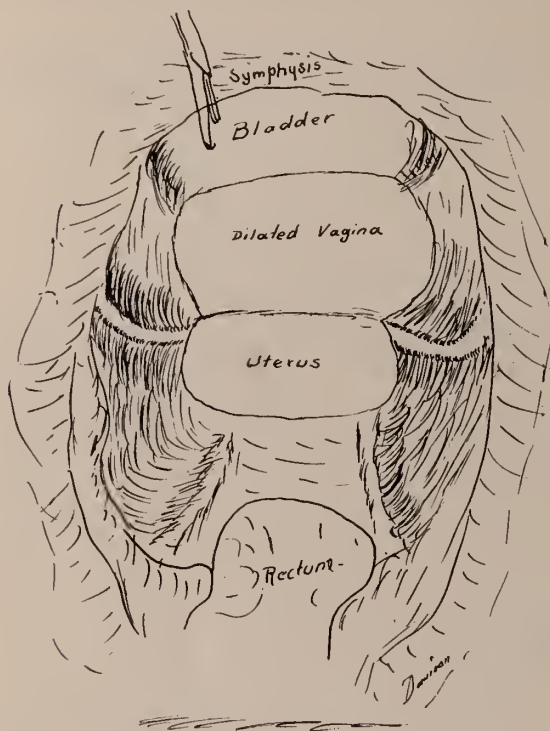


Fig. 1. Note the distended vaginal vault as it appeared when the abdomen was opened.

of congenital origin cannot, according to Nagel, exist with normal pelvic organs. Novak concurred in this view, since in six cases of congenital absence of the vagina reported by him the uterus was absent.

Gynatresia from any cause generally produces no symptoms until the inauguration of menstruation, and attention may first be directed to the condition because of failure of the menses to appear at the usual age. Sooner or later there is actual pain at the monthly periods, often colicky in nature. As the condition advances to development of hematocolpos, hematometra and hematosalpinx a tumor is observed in the lower abdomen. Secondary infection of the retained blood and peritonitis are occasional sequelae.

We are reporting in this paper a case of congenital atresia of the upper vagina with retained



Fig. 2. The vagina as it appeared after perforation of the hymen and subsequent dilatation.

She was perfectly well until June, 1937, except for some listlessness and fatigue during the preceding year. At this time she developed pain across her lower abdomen with nausea and vomiting. She was taken to a hospital because the condition at first was thought to be appendicitis. After a few days the condition at first was thought to be appendicitis. After a few days she improved and was discharged. On August 17 the cramping pains across the lower abdomen recurred.

She had no fever. Two days later she was again hospitalized because of persistent cramping, nausea and vomiting, and an exploratory laparotomy was done. Large blood-filled cysts were found to involve both ovaries, and the tubes were distended with blood and not well defined. Bilateral salpingo oophorectomy was done. There was a mass in the region of the uterus and the possibility of a uterine anomaly was considered by the surgeon at that time. She made an uneventful recovery and was discharged from the hospital on August 30. After surgery she received an ovarian preparation by injection every two weeks.

She remained quite well until December 27 at which time a similar attack of abdominal pain occurred, that was severe and cramping with nausea and vomiting. There was no fever. Two days later she was admitted to the hospital and was first seen by us. The examination was essentially negative except for a large pelvic mass palpated rectally. This mass was hard and considered to be an ovarian cystoma, probably a dermoid. Urinalysis at that time was negative. The blood count showed hemoglobin 80%, erythrocytes 3,616,000 and leukocytes 8,650. An exploratory laparotomy was advised and performed on December 30 by one of us (H. L. D.) under ether anesthesia. The scar of the previous low midline incision was excised and a right paramedian incision made. The bowel was matted together with adhesions. The uterus was normal in size but at its lower end a large mass about the size of a small grapefruit protruded anteriorly and posteriorly. The bladder was small, collapsed and overlaid the uterine mass. There was no apparent line of cleavage between the uterus and the mass below it. Since both tubes and ovaries had been previously removed it was decided to remove the uterus in order to find a line of cleavage. On incision of the mass during the process of hysterectomy, a large amount of chocolate colored material resembling blood gushed forth and it was then realized that the mass was the vagina distended with blood. The uterus was removed in the usual manner and the fringe of vagina was readily seen about the cervix. The uterus was not anomalous. The vagina was thoroughly evacuated and an effort made to pass a forceps into it but firm obstruction was encountered. At this stage an assistant examined the vagina from below; he was unable to introduce his finger because of complete vaginal atresia. The vault of the vagina was closed and the appendix removed. The abdomen was then closed and the patient placed in the perineal position for examination of the vagina in more detail. The hymen was imperforate and a small forceps was used to enter it. This was easily accomplished and a slight relaxation noted as the membrane was perforated, there being a small cavity above the hymen representing the vagina. This cavity was 1 cm. in diameter. Beyond this there was no visible opening. One finger was inserted and pushed back the length of an index finger but this was not enough to contact the dilated vaginal mass. Two fingers were inserted to dilate the occluded

tract more completely. The complete occlusion extended for a distance of about 4 cm. No attempt was made to do a plastic repair of the vagina at this time since the operation had been prolonged. She made an uneventful recovery and was discharged from the hospital January 5, 1938.

Later in January, 1938, a more complete examination was done in order to look for other anomalies. On January 29, 1938, the urinalysis was negative. The blood count showed hemoglobin 71%, erythrocytes 3,670,000, leukocytes 5,400 of which 42% were lymphocytes, 6% monocytes, 51% neutrophils and 1% eosinophiles. The Kahn test was negative. The basal metabolic rate was +6%. The fundus examination was negative. Roentgenologic studies of the chest and stomach were negative. Studies of the kidneys, ureters and bladder following injection of skiodan showed duplication of the right kidney pelvis.

COMMENT AND DISCUSSION

Judging from reports in the literature and text-book discussions gynatresia is not a common condition. In most instances the obstruction is in the lower one-third of the vagina and is often located at the vulvo-vaginal junction. The most common cause of atresia is an imperforate hymen, and in those cases with retained menses the hymen may often be seen to be purplish-red and bulging. Simple incision of the obstructing membrane with evacuation of the retained old blood will often relieve the condition. Stenosis or atresia higher in the vaginal vault is more rare and the symptoms arising from visceral distention by retained menses are not typical. These factors make diagnosis difficult and unless it is borne in mind that such a condition occasionally does occur it will not be diagnosed prior to laparotomy. The occurrence of periodic cramping abdominal pains in a girl 13 to 15 years of age associated with absence of menstrual flow and perhaps a lower abdominal tumor should bring gynatresia and retention of menses to mind. Careful examination of the vagina is important, but obviously in the cases of high obstruction the occurrence of a normal appearing hymen may be misleading. Under such conditions more careful vaginal examination under anesthesia may be indicated.

We have reported herein a case of vaginal atresia in which the obstruction occurred in the middle one-third of the vagina and lay above an imperforate hymen. The atresia extended for a distance of 4 cm. and was associated with hematocolpos, hematometros, hematosalpinx and

hemorrhagic ovarian cysts. The uterus was not anomalous.

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WILLS AND TRUSTS

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After a number of years of service with The Northern Trust Company, one ought to possess such a fund of experience and of interesting anecdotes that he should require no notes. Unfortunately, they do not train trust officers to public speaking and an unskillful speaker is apt to lose his place, employ too many words and fail to cover his subject properly. Hence I come before you with a sheaf of typewriting which I only hope will not be boresome. If it is, I may be in the position of a certain Lord Hartington of Mr. Gladstone's cabinet, who once addressed his constituents with a written speech and while delivering it he paused and yawned. He immediately apologized to his audience, saying he really couldn't help it because the speech was so dull!

Wills are usually the record of a man's thoughtful regard for his dependents, expressing his wishes for their protection according to their special capacities and needs. Upon occasion they may be cold, cruel documents, giving vent to the maker's spleen against individuals or society in general by airing some pet grievance. Perhaps less usual are the wills imposing some whimsical fancy like the recent stork race in Canada that led to legal difficulties and no end of babies.

There are two wills of this whimsical type that show the extremes to which men may go in ex-

tending their dominion after their lifetimes—both are founded in fact.

Not many years ago, there was a sportsman in Toronto who because of his business activity had been in continual "hotwater." He owned and operated a race track and ran a string of horses. In addition, he was the principal owner of a brewery. It seems that the Catholic Church had been active in trying to curb his racing activities and the gambling among the parishioners which was diverting their earnings in his direction to the detriment of the families and church. The Methodists were exceedingly zealous in their attempt to dry up the province and did their best to remove the sordid influence from their midst that flourished on the products of the brewery.

One may imagine the perhaps malicious satisfaction this bachelor-sportsman had in preparing his will and providing thereunder for the objects of his bounty. Upon his death it was discovered that in his will the stables and race track were left in trust to the Catholic Bishop! The Methodists were also provided for, receiving under the will the stock of the brewery which was held for them in trust. If either refused to accept the revenues derived from the business held in their behalf or in the event of a subsequent sale of the assets, then the property went to other beneficiaries. Presumably this Canadian sportsman had hoped to bait the two institutions that had harassed him for so many years during his life, or perhaps he thought to test the sincerity of their convictions to a point where it became necessary for them to either shut their eyes to needed revenue or stand by their principles and renounce.

Contrary to the usual provision regarding marriage that one ordinarily finds in a will, a certain Englishman took what seems to me to have been an unfair advantage of his wife in so public a document as a will. By the terms of this instrument, he provided an annuity of 1,000 pounds to his wife for life provided, however, that if she remarried, then the annuity should be increased to 2,000 pounds per year. He stated that he chose this method of rewarding his successor as husband to his wife, feeling that no doubt the new husband's life would be substantially shortened by reason of this marriage as he felt that his wife had driven him to an early grave. It isn't everyone that gives his successor such a break.

However, these oddities have but little to do with our more serious purpose of discussing wills as a medium for the transfer of capital wealth. The earliest will extant bears the date of 2548 B. C., more than 4,000 years ago and is Egyptian. This will was unearthed by William Petrie, the famous Egyptologist, and is now a part of the archeological collection of the Museum of London University. A portion of a translation of this Will reads as follows:

"I, Uah, am giving a title to property to my wife, Sheftu, the woman of Gesab, of all things given to me by my brother, Ankh-ren. She shall give it to any she desires of our children she bears me . . . It is the deputy Gebu who shall act as guardian of my son. Done in the presence of these witnesses . . ."

It will be noted that Uah made his will in quite the modern manner and conformed so largely to our present conventions that his will might almost be granted probate today. He gave his wife an interest for life in the property which he received from his brother and limited his wife's power to give this property only to their children under her will. Uah named a guardian and executed his will in the presence of witnesses. He used many of the devices currently employed to expedite the disposition of property and to minimize taxes.

In spite of the long period in which wills have been used as a medium of passing men's estates from one generation to another, people do not have the inherent right to give away their property by will. Both the State and Federal Government have something to say about it. The Federal Government says, "In order that you may have the right to give your property to some one other than to me, I will tax your right and your estate must pay me." Today the Government's arresting hand lies heavily upon many estates and the tax in many cases becomes a considerable item.

The State, too, exerts its influence by saying that you may leave your property by your will if you wish, but if you don't make a will, it has one already made for you that will name your beneficiaries and say how much of your property they shall receive. Moreover, if you make a will the State insists that it conform to certain requirements of State Law; the State says that you cannot exclude your wife or husband under the terms of your will; that if children have not

been excluded specifically as a class, that children born after the date of the will shall take proportionately with other children as if you had died without a will. In some states, particularly in California, the law says that you may give only one-third of your estate to charity if there are legal heirs and a charitable bequest will fail entirely if the will be drawn less than 30 days before the death. Our State also says to the heirs, "In order that you may receive property, I shall tax you on that right in accordance with your relationship to the decedent." To the property owner the State says, "If you leave no will nor next of kin, your property shall escheat to me." And, the law also protects the right of your creditors and says before your heirs may have any of your estate, you must pay your just debts.

This leads me to the confused state of mind of quite a few people to whom I have talked relative to their immediate rights in the property left by their husband, wife or some near relative. Contrary to the impression of many, a decedent's property does not pass immediately to his or her heirs. The law in Illinois requires an interval of at least a year in which the claims of creditors may be presented, in which a surviving spouse may elect to exercise his or her dower rights and in which taxes, both Federal and State, may be assessed. The law requires that title to the decedent's property be held by an officer of the Probate Court, an Executor if named in the will, or an Administrator appointed by the Court, if not so named. Thus the rights of the heirs to the estate are postponed and are subject to claims that come in ahead of their interests.

This lack of understanding on the part of heirs concerning the procedure made necessary by the law and particularly the disastrous results from utterly disregarding the law relative to the disposition of property in order to suit one's own convenience is exemplified in this situation: A Chicagoan had during his lifetime created a Living Trust with one-half of the stock in his corporation for the benefit of his sisters, and after their lifetimes for the benefit of a charity. He named himself and one of his sisters as Trustees and provided that the Trust could be revoked by giving notice in writing to all the beneficiaries. Since the Trust was revocable, the income was legally taxable to him, although he never thought so for he never paid it. In 1935

he revoked the Trust, but gave no notice to anyone—not even to the Co-Trustee who never released the stock—and reissued the certificates in his wife's name, dating the transfer prior to June 6, 1932, presumably to avoid gift tax.

Now that he has passed on, who owns the stock—the trust which was not properly terminated and under which the sisters and the charity have a claim, or is it the wife? What will the income tax and penalties be? Or, if a valid gift was made to the wife, what about the delinquent gift tax? Or, perhaps the stock is a part of his estate for tax purposes if the gift fails.

This man's will presented equal difficulties with problems resulting from acts made for the sake of convenience during his lifetime. His only property was the corporation, but the corporate assets were found all in his own name, stocks, bonds, mortgages and real estate. He borrowed over \$100,000 from the corporation, but insisted in his will that this was not to be a claim against his estate—and now his wife says, "Let's forget all this and have a new deal, dividing the property among my children and my husband's sisters and myself in some equitable manner." Obviously, the law cannot be circumvented because it suits one's pleasure to ignore it.

But enough of gossip—what is a will? It has been defined as a legal declaration of a person's wishes regarding things that he may request or may require to be attended to after his death. It is not wholly correct to say a will is a written instrument—it may be declared orally and may not be reduced to writing until after the testator's death. It is not always sufficiently inclusive to say that a will relates to the disposition of one's property after death—a valid will may constitute only a statement naming an Executor or Guardian.

Who may make a will? The legislatures of the various states decide. Here in Illinois anyone of legal age and sound mind may make a valid will. The legal age for men in our State is 21 and for women, age 18. A will made when one is of sound mind will be accepted for probate even though the maker of the will later becomes insane. Where there is a doubt of a person's mental capacity, it has proved of value upon more than one occasion to preserve the old will, which may be probated in the event that the new document is adjudged invalid.

Just what constitutes proof of a person's testa-

mentary capacity? In most states a person can make a valid will 1. if he comprehends the nature of the transaction in which he is engaged; 2. if he recollects the property of which he disposes; 3. if he recollects persons who would be supposed to have claims upon him; 4. if he comprehends the manner in which the will will distribute property among the objects of his bounty.

There are eight kinds of modern wills. Only three, however, that are used in the United States and England are of interest to us; the other five are used in civil law countries. The wills in use in the United States and England are the holographic will, the nuncupative will and the ordinary will. The holographic will is one written entirely in the handwriting of the maker or testator and does not require subscribing witnesses. Since this type of will is not recognized in Illinois, we can dismiss it.

A nuncupative will is an oral will and usually arises out of emergencies, as in the case of a civilian who is conscious of approaching death, or for a soldier or sailor in time of war, who, when wounded, has no opportunity to make a regular will. In Illinois such a will may be used to pass title to personal property but not to real estate. The maker of the will must declare his wishes before two witnesses, and his statement of the disposition of his personal estate must be committed to writing within 20 days of his spoken instructions and within 10 days of his death. The written statement must be subscribed to by two additional witnesses. It also follows that the testator must die, for if he recovers he, of course, has the opportunity to make a regular written will and, therefore, this temporary spoken will becomes ineffective.

Now we come to the so-called ordinary will which may be either handwritten, typewritten or printed by the testator or by someone else. It may be written by pen, pencil, or typewriter and in any language. Long ago it was the custom to have such a will written in longhand in order that there might be no alteration or substitution of the pages. Only the other day we had a client come into the bank who is now in his seventy-eighth year and who still persists in clinging to his old-fashioned idea of penning out his rather lengthy will at intervals of every two or three years. Today, in order to avoid the substitution of pages or alteration of paragraphs, it is cus-

tomary to have the testator sign each page of the document to identify it.

An ordinary will must be signed by the testator or by someone for him at his direction. For example, the testator may make only an "X" at the place for his signature, or may have someone else sign for him as "John Doe by the hand of Richard Roe." If a testator is either illiterate or blind the will should be read aloud to him in the presence of the witnesses. Under ordinary circumstances, however, a will need not be read to the witnesses, but the testator must tell them that it is his will and ask them to sign it. In Illinois there must be at least two persons who sign as witnesses in the presence of the testator and in the presence of each other. It is usually advisable, however, to have three witnesses, for one never knows when a will may be declared invalid because the necessary number of subscribing witnesses have not attested the testator's signature. For instance, if a resident of Illinois owns property in Florida and leaves the property to a member of his family, the will could not be admitted in Florida if only two witnesses had been employed, for the State of Florida requires that there be three.

It is of the utmost importance that the witnesses to a will shall not be financially interested in the estate. A witness who is also a legatee will forfeit his or her legacy and a testator, therefore, should never have his will witnessed by his wife or child or any member of his immediate family, nor by the husband or wife of any of the legatees, nor should a stockholder of a corporation who is named either as Executor or Trustee be permitted to subscribe his name as a witness.

A will should not be permitted to refer to outside documents except that it identify such documents exactly and specifically if they are to have any legal effect. There is a rather interesting case in point known as the Bennett Will case. Mr. Bennett was a very well-to-do man living in the East. He was a great admirer of the late William Jennings Bryan and adhered to Mr. Bryan's theory of sixteen to one money, as well as to other thoughts propounded by the Silver-tongued Orator. Because of his wealth and because of his associations in business, Mr. Bennett did not want it to become known that he supported Mr. Bryan and yet under his will he desired to leave a substantial amount to Mr. Bryan and his cause. As you know, a will is a public

document after the testator's death and in order to avoid an open declaration, Mr. Bennett referred in his will to a letter that would be found among his personal effects and requested that the terms of the letter be followed by his Executor. Upon Mr. Bennett's death, it was discovered that the letter provided a handsome munificence to the great Nebraskan, which Mr. Bryan sought to collect. The reference in the will, however, was not to a specific letter that could be accurately identified, and as it might have been any other letter, it was not admitted to probate and Mr. Bryan lost his bequest. Incidentally, Mr. Bryan who was a lawyer had prepared the will and should perhaps have known better. At any rate, he was subject to a bit of badgering by his brothers at the Bar, for it was not wholly ethical for him to prepare a document of which he was a beneficiary.

The manner in which a will may be changed is of some importance. I have had presented to me many documents which have been altered by interlineation. Frequently, men will cross out certain sections of their wills and substitute new provisions in their own handwriting. These changes that are made after the will has been executed and witnessed are not valid and will not be admitted in probate. The only safe way to make a slight modification to a will is by a codicil, which in itself is a sort of will, although actually an amendment to one. A codicil must be executed with all the formality of the will itself and should acknowledge, republish and confirm all parts of the will that are not changed. If a substantial modification of a will is to be made, it is only proper that a new document should be drawn.

A testator may revoke his will or codicil in a number of ways, by a written instrument executed with all the formality of a will which expressly revokes his will or codicil, by tearing, burning, mutilating or otherwise physically destroying the instrument with the intention of revoking it, or he may make a new will which expressly revokes all former wills and codicils. If a later will fails to expressly revoke all former wills, it will not revoke previous wills except insofar as they are inconsistent with the last will. In this State, if the testator marries after he has made a will, the marriage is sufficient to revoke the will. Children born after the date of making a will will not in Illinois revoke the will executed

prior to their birth. Such children, even though not mentioned specifically will take proportionately with other children born prior to the making of the will unless there is specific language purporting to exclude such children as a class. It is not necessary that a testator set forth in a will an enumeration of his property, although if he does, his will may be nullified in part if he has conveyed some of his property subsequent to its execution.

One sometimes hears a person say, "I will not make a will because it can be broken." Actually, it is very seldom that contests of wills really occur. People gain a contrary impression because the wills that usually find their way into the news columns are those that have been subject to a contest and one usually loses sight of the thousands of wills that pass through the Probate Court and perform their regular functions without having gained any notoriety at all.

There are, however, six usual grounds upon which a will may be contested. They are:

1. That the will or codicil was not legally executed; i.e., not properly witnessed.
2. That the decedent did not have testamentary capacity at the time of execution; i.e., was not of sound mind.
3. That the execution was procured by undue influence; i.e. testator was cajoled into favoring someone against another.
4. That the execution was procured by fraud; misrepresentation.
5. That the instrument is a forgery.
6. That the instrument has been revoked by a subsequent will.

It is true that when a person seeks to make an unnatural disposition of his property that his will is vulnerable to a contest. Some contests are actually a racket employed by unscrupulous individuals or lawyers. I am mindful of a very recent situation where a wealthy Chicagoan left his entire estate to a number of charities. The man died without a wife or any children, leaving only some distant relatives for whom he believed that he had provided adequately during his lifetime. It was not until one of these relatives had been pressed unduly by a lawyer that he was finally induced to sway a number of other possible claimants to the decedent's will to bring a suit contesting the validity of the will.

Now it is common knowledge among attorneys that in a contest on a large estate a jury will find

in favor of the supposedly maltreated relations rather than in behalf of large charitable organizations. If the case is appealed and ultimately taken to the Supreme Court of the State, it is usually a matter of from three to five years before the litigation is at an end. In the meantime, the charities, if the will is held to be valid, have been deprived of the benefits of the gifts made to them and enormous legal fees have been incurred. The knowledge of these facts weighs heavily in the favor of the complainants and their attorney knows that frequently a profitable settlement will be made rather than to wage an expensive and prolonged battle in the Courts. So it was in this case that I mention that a settlement was finally arranged for slightly more than the estimate of the cost of from three to five years litigation, and the litigants benefited to the extent of almost \$100,000.

One of the most startling and dramatic will contests in local history was that of James C. King. The case ran its course in the courts of Chicago and in the newspapers for many years. Mr. King died in 1905, leaving a large estate for the purpose of founding a home for old men. Shortly after his death, there was a contest over a marriage settlement with his widow which was finally settled. The widow subsequently came under the influence of one Gaston B. Means, whose name is probably familiar to most of you. In 1915, Mr. Means purported to have found among some papers in an old tin box a will executed by Mr. King only a short time before his death. This document was practically identical with the will which was presented for probate with the exception that after certain bequests the remainder of the large estate was given to the wife instead of the home for old men.

For a long time Mr. Means did not show this will but simply talked about it. In 1917, however, he presented the will and it was noted that among the witnesses to Mr. King's signature was the name of Mr. Byron L. Smith, who in 1905 was President of our trust company. All of those in the bank who were familiar with Mr. Smith's signature unhesitatingly pronounced it a forgery.

It has never been quite clear just what use Mr. Means intended to make of this will;—possibly to keep Mrs. King pacified under his management or to use it to effect some compromise settlement with the bank and the home for old men which by this time had been established. After

this interview, Mr. Means took the will away with him and left it with a lawyer in New York City without attempting to probate it.

In August of 1917, Mrs. King and her sister, Mr. Means and some friends went in a party to North Carolina to the home of Means. Here the party seems to have taken up target shooting as a recreation. While engaged in this, in some way Mrs. King was shot in the back of the head. Testimony showed that at the time Means had his back turned and was getting a drink at a spring. Mrs. King was rushed to a hospital, but died before arriving there and at the inquest it was decided that death had been accidental at Mrs. King's own hand.

During the period of the war, Gaston Means had come under the surveillance of the Federal authorities because of suspicion that he was doing secret work in German interests. The government searched all of his papers and among them was the will which was forwarded to the Probate Court in Chicago. This court immediately precipitated the probate of the will and Means had no other alternative than to fight the matter through the court as best he could.

There followed a period of long drawn out legal proceedings in the Probate Court and it was demonstrated that Mr. Smith's signature as a witness to the will was not his own since on the day that he was supposed to have signed the document he was away on a motor trip in New England.

I shall not attempt to go into the contents of a will. This is a field that should be specifically reserved for one of the legal profession and there is yet the subject of Trusts to be touched upon.

As to Trusts, a Trust is defined as a confidence reposed in one person with regard to property held by that person for the benefit of another. There are many kinds of Trusts, for example, personal, corporate, community, institutional, and industrial, but we are only concerned here with personal Trusts. Personal Trusts have been classified from various aspects, but time permits the mention of only the two most common forms of but one of the classifications, namely, Trusts created by Wills and Trusts created by contracts, otherwise known as Testamentary Trusts and Living Trusts.

At this point, I should like to say something about the size of Trusts that are practical for the administration of trust companies and that are of

value to the beneficiaries for whom they have been established. We are frequently called upon to accept Trusts of five, ten, fifteen or even twenty thousand dollars that are supposed to care for and protect a man's wife and children. When it is realized that even under more favorable investment conditions than exist today the few hundred dollars of annual income that may be obtained from a small Trust is wholly inadequate to meet the minimum living requirements of the family, it becomes apparent that it is unjust to deprive the beneficiaries of the use of the principal itself and that some other medium than a Trust must be found to solve the problem. Few metropolitan trust companies can profitably administer a Trust of less than \$50,000. This statement becomes quite reasonable when one appreciates that the annual fee for a \$50,000 Trust in Chicago is usually \$250. This fee is supposed to cover the expenses of management, investment research and analysis, custody of the securities, collections and disbursements of income and principal, maintenance of adequate records of account, statements, clerical hire and the time of administrative officers in considering the problems presented by the Trust assets, together with the personal contacts with the beneficiaries. All of these functions must be performed in an account of less than \$50,000 and I submit where in the world can you find anyone who can afford to hire himself out for a full year to perform all of these services at an amount of less than \$250, particularly where one accepts the responsibilities imposed upon a Corporate Trustee by the Laws and the Courts of the land.

Now let us return to the subject of how Trusts under wills are created. A testator, or the maker of the will, has the choice of leaving property outright to his contemplated beneficiaries or of leaving it in Trust for them. Legally, a testator may give in Trust any kind of property that he may give outright.

Except for the limitations imposed in some states upon gifts for charitable purposes, a testator may create a Trust under his will for the benefit of any person or institution that is capable of owning property. The inability of an individual to manage property in no way affects the right of a testator to create a Trust for that individual; in fact, minors and incompetents are among the chief beneficiaries of Trusts.

Some of the purposes for which Trusts under Wills are created are as follows:

To hold the family together: first, by preserving the homestead; second, by relieving the mother from the duties of property management for which she may be fitted neither by aptitude nor experience, thereby releasing her energies to be devoted to the requirements of the home and the care and upbringing of the children; and third, by supplying the income requisite to maintain a normal standard of living.

Let me expand this last point: If a man divides his property between his wife and his children, the portion of any child who has left the family circle through marriage or otherwise is at once withdrawn from the family estate. The portion of any minor is kept separate by the Guardian and is used exclusively for that child's benefit under the supervision of the Probate Court. Thus, an estate which, if handled as a unit, would have been ample for the requirements of the family as a group becomes inadequate when split up and used for the separate requirements of its various members.

Another purpose served by Trusts under Wills is to meet the special requirements of children as members of society and not merely as members of a family. In the absence of a mother, it may be necessary for the Trustee to take her place in caring for the special requirements of the children, whether their requirements be of a financial, personal or individual nature. A testator may make the terms of the Trust sufficiently elastic to permit the Trustee to advance or withhold income, to encroach upon principal, to apply the income or principal for the benefit of the child instead of paying it to him direct. A Trustee may be authorized to continue a Trust until the child reaches a mature age or meets the requirements specified by the testator.

Still another purpose for which Trusts under Wills are created is to enable the testator to bestow the benefits of property without conveying its burden of management.

A Trust created under the terms of a Will does not become operative until after the death of a testator. This is opposed to the second named type of personal Trust which is known as a Living Trust, which becomes operative during the lifetime of the creator of the Trust and may continue after his death.

Ordinarily, a Living Trust is created by one

person for the benefit of another, the property for the Trust being delivered to a third party, as Trustee; the owner, on the other hand, may declare himself as Trustee for the beneficiary. Not infrequently the owner of the property creates a Trust for his own benefit, but he may not act as Trustee for himself, alone, for he then becomes the absolute owner, having both the legal title and the equitable title and hence is discharged of the attempted trust.

Living Trusts, if classified according to the rights retained by the creator of the Trust, may be either revocable or irrevocable. Under a revocable Living Trust the maker of the Trust reserves to himself, alone, the power to bring the Trust to an end and to recall his property and again become its absolute owner. Revocable Living Trusts are the most commonly used, although recently because of the greater savings in taxes afforded by the irrevocable Trusts, the latter have had a greater vogue.

Obviously, under an irrevocable Living Trust, the maker of the Trust has given up the power of revocation. However, there are degrees of irrevocability. For example, "A" may agree that he cannot revoke the Trust created for "B's" benefit, without "B's" consent, or, "A" may make the Trust irrevocable for a term of years and revocable thereafter, or he may make his power of revocability contingent upon the happening of a certain event, say the death of "B," or he may make the Trust irrevocable unless he gives notice of his intent in one year to revoke the Trust in the next succeeding year.

If there is no provision in the Living Trust regarding the right of revocation, the Trust may be considered irrevocable, particularly if the beneficiaries are minors, or if contingent or undetermined persons such as unborn grandchildren may take under its terms.

The power to amend a Trust Agreement is the power to change its terms. This right may always be retained, both under a revocable and irrevocable Living Trust, but it is not usually reserved under the irrevocable form as such a power would forfeit the opportunity to procure certain tax exemptions.

It has been held to be against public policy to permit property to remain for too long a period in trust. The law has, therefore, placed certain restrictions upon the duration of trusts which may be found in the rule against perpetuities. In

Illinois the rule is fairly liberal; trusts made for the benefit of charities may continue forever. However, those established for individuals are limited to a period not exceeding lives in being and twenty-one years thereafter.

Just as the law looks with disfavor upon the trusteeing of property for the benefit of individuals for too long a time, it also looks with disfavor upon the accumulation of income for too long a period. In Illinois the statute against accumulations permits income to be withheld during the minority of a child or for a period not to exceed twenty-one years in any event. Both under the rule and the statute the period starts in the case of a Living Trust from the date of the Trust and in case of a Will from the date of the death of the Testator.

A fundamental distinction between the effect of a violation of the rule against perpetuities and the effect of the violation of the statute against accumulations is that in the case of the former, the Trust may be rendered entirely void, while in the latter situation it may merely accelerate the distribution of the income.

Just how long a Trust should continue may only be determined by the facts surrounding the purpose for which the Trust was created and the requirements and capabilities of the beneficiaries for whom it was established. Each situation is necessarily different, but when the needs for the protection to the beneficiaries, the experienced management of the trust properties, the friendly counsel and discretion of the Trustee cease to exist—then also does a Trust cease to serve a social and economic purpose.

LOCAL TREATMENT OF ARTHRITIS BY INUNCTION; A NEW METHOD OF APPLYING HISTAMINE

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Among the early investigators of the relationship between rheumatic and arthritic disorders and abnormalities in the capillary circulation were Bisset and Woodmansey.¹ They examined and photographed the capillary beds of the nails of more than 100 patients who had fibrositis and arthritis; 36 normal subjects were studied as controls. The results were reported in 1932. Circulation in the capillary beds of the normal individual was characterized by "1. Uniform well-

filled frontage of thick loops (average diameter—i.e., distance across—0.05-0.06 mm); 2. Usually a large proportion of curled loops; 3. Loops are short—i.e., they ascend and descend quickly from the arterioles and the venules; 4. Frequently the thick epidermis prevents a well-defined picture."

The capillary beds of the rheumatic patients showed circulatory deficiencies, "1. A paucity of loops; 2. Considerable attenuation present in all cases and consequent tendency to discontinuities; 3. Usually (but not in all cases) long, straight loops parallel with and close to the surface, which permit in general, a clear, crisp photograph. There appears no doubt that in most, if not all, cases of well-established rheumatic conditions the capillaries are in a spastic state. . . "

In conditions characterized by diminution of circulation in local areas, such as rheumatic and arthritic disorders, dilatation of the capillaries in the affected parts should be of benefit. Histamine, beta-iminazolyethylamine, causes dilatation of the capillary bed when introduced into the human organism in even extremely small doses. A year before the report of Bisset and Woodmansey on the circulatory abnormalities of rheumatic patients, Deutsch² had reported encouraging results from the use of histamine in the treatment of myalgia, sciatica, arthralgia, traumatic myositis, and arthritis deformans.

In 1933 Bisset and Woodmansey³ reported on the electro-phoretic administration of histamine to rheumatic patients. This method was chosen because it is agreeable to the patient, there is definite penetration into the tissues, a purely local effect is obtained. Histamine is inactive by mouth and uncontrollable by injection. At the positive pole, through which the histamine solution was introduced, an extensive wheal arose, roughly conforming to the shape of the electrode, surrounded by a zone of erythema. Despite the rather alarming appearance there was no pain; in fact, a feeling of anesthesia occurred in joint and muscle areas previously painful on motion. Improvement occurred in osteoarthritis, particularly of the smaller joints, arthritis of the knee, chronic articular gout, and fibrositis, especially of the chronic type. Pain was lessened, swelling and deformity decreased, and motion was less restricted. The results were attributed to the increased blood supply occasioned by the histamine.

Within the next year many reports were pub-

lished concerning the value of histamine in rheumatic disorders. Shanson and Eastwood⁴ stated that while histamine was of definite benefit, therapeutic effects following ionization were generally absent. They considered the administration of histamine by injection to be preferable, beginning with 0.1 mg. and increasing the dose by 0.05 mg. daily until a satisfactory response was obtained. The effective dose was then injected two or three times a week and increased as necessary to maintain the response at a satisfactory level. Bisset discussed their report in a letter⁵ and pointed out that he had given more than 3000 successful ionization treatments with histamine. Other investigators⁶ including Bettmann, Dzsinich, Kaeppli, Schapira, and Trumpp, had also reported successful results with histamine by ionization.

Mackenna,⁷ who had published many papers on the treatment of rheumatic and arthritic disorders, employed a histamine ointment both by iontophoresis and by massage. In the iontophoretic treatment he found the ointment preferable to histamine solutions; massage with the ointment was beneficial, but it was found that "on the whole, results are less satisfactory than when ionization is used, but where massage is desired, histamine can advantageously be employed, and it may safely be used in cases of failing compensation which cannot have ionization." Mackenna has several times since voiced similar conclusions in other reports.

About the same time that Mackenna's report appeared, there was one by Kling⁸ describing the successful treatment of rheumatic and arthritic disorders with histamine by iontophoresis. A later report by Kling⁹ on histamine by iontophoresis dealt with its use alone or in combination with other measures.

Rumbaugh¹⁰ applied an improved histamine ointment, Imadyl Unction,* by massage and by iontophoresis. His results were satisfactory. Recently Young¹¹ reported his results using the same preparation but applying it by simple massage alone. He comments that "the chief criticism of the local application of such compounds (vasodilator drugs) by the galvanic current is the time and the special apparatus required to administer the treatment. The patient must visit the physician and allow about thirty to forty-five minutes for the treatment; the time

and the expense is usually of sufficient magnitude to discourage many patients or at least cause them to take fewer treatments than are necessary to obtain the best results. The ideal treatment, therefore, is some method which requires no special apparatus and which can be employed by the patient either daily or every second day." Sixteen cases of chronic infectious arthritis and ten cases of chronic hypertrophic arthritis were treated by Young. A decrease in swelling, pain, and numbness and improved circulation were obtained. Restriction of motion was not as pronounced as before treatment, and the patients noted an increased ability to use the affected part.

It seems fairly well established that in cases of rheumatic and arthritic disorders there are abnormalities or deficiencies of the circulation. That the circulatory changes are particularly pronounced in the affected parts is indicated by the many reports dealing with the morbid anatomy of these disorders. The literature shows that improvement of the circulation is followed by improvement in the rheumatic and arthritic disorders. Vasodilators are used to improve the capillary circulation and, accordingly, histamine has been extensively investigated and made the subject of many reports.

When considering the use of histamine, its oral administration can at once be rejected, since it is immediately detoxified and inactivated by physiological processes. It seems preferable to apply the drug locally, i.e., at the affected site, but it must be administered in such a fashion as to avoid a generalized systemic capillary dilatation.

In producing local capillary dilatation, three types of local administration may be used: iontophoresis, subcutaneous injection, and simple massage. Injection of histamine may give rise to unpleasant systemic reactions and patients object to frequent use of the needle. Iontophoresis requires special equipment but is less liable to be attended by systemic reaction, since the dose can be well regulated. This type of administration has been attended by results that prove the unquestionable improvement that follows penetration of the affected part by histamine. Until recently the application of histamine by inunction of an ointment has not been paid much attention, probably because there has been doubt as to the penetration of the histamine through the skin into the tissues when this method is used.

*Prepared by Hoffmann-La Roche, Inc., Nutley, N. J.

The reports by Rumbaugh and Young, particularly the latter, indicate that the inunction of a suitable histamine ointment is followed by positive beneficial results, indicating that penetration does take place. The preparation which they used has been investigated. It is not believed, however, that the use of histamine, by whatever means, as a corrective of local circulatory deficiencies can be relied upon as the sole method of treatment. The various causes of rheumatic and arthritic disorders must be sought out and treated as usual, and the commonly endorsed therapeutic measures employed. The local use of histamine is only an adjuvant measure and should be so regarded.

Six cases of arthritis showing in particular pain, numbness, joint swellings, increased local temperature and deformities have been treated with Imadyl Uction, combined with a high vitamin diet in all cases and, in the first five cases, an autogenous vaccine prepared from cultures derived from infected, pulpless teeth, urine, feces and the nose and throat.

In each case the method of applying the ointment was the same: Hot applications were applied for at least thirty minutes over the area to be treated. The ointment was then thoroughly massaged into the affected part and followed by dry heat. Applications were made twice daily.

Case 1. E. G., female, aged 60. A severely painful, swollen and deformed left hand and wrist. In addition to elevation of local temperature, loss of function was marked. Symptoms were of one year's duration. Within two weeks after the beginning of treatment, the swelling subsided, the pain lessened, and the paresthesia disappeared. During three months of treatment, improvement was continuous. The hand and wrist became practically normal in appearance, and the patient was able to use them in everyday activity with normal strength and dexterity.

Case 2. G. M., female, aged 43. Following the extraction of infected teeth, a marked deforming arthritis developed and had been present seven months when she was first seen. There was swelling, deformity, marked elevation of local temperature, pain and extreme limitation of motion in the hands, the wrists, the knees, the feet and the neck. In addition the patient was extremely emaciated and severely anemic. Three days after treatment was begun, the swelling of the joints of the hands diminished and passive motion could be borne. The neck could be moved after seven days, and after ten days the patient was able to help herself out of bed for the first time in six months. Improvement has continued and the patient is now comfortable, fairly active, and almost entirely free of deformities.

No ill effects from the treatment have been observed.

Case 3. E. K., male, aged 63. In the three years after a stubborn and severe case of streptococcic colitis had been brought under control, there had been stiffness and limitation of function of the left elbow and the left hand and fingers. There was also paresthesia, loss of proprioceptive sense, and atrophy of the intrinsic muscles of the hand. After three months of treatment the paresthesia completely disappeared, the proprioceptive sense partially returned so that coins, keys, etc., could be detected with the fingers. Function has materially improved and there has been a reduction in the stiffness.

Case 4. F. H., female, aged 47. This patient was so severely ill when first seen that the case appeared hopeless. Following a tonsillectomy four years ago, acute generalized arthritis developed. A year later the knee was operated upon and ankylosed. At the time of the first visit there was pain, swelling, and stiffness of the right shoulder, the right wrist and hand, and the right knee. The involvement of the lumbar and sacral vertebrae was so extreme that almost complete ankylosis with a marked alteration in posture and gait had occurred. Treatment decreased pain and improved motion. Treatment is being continued and the condition is improving.

Case 5. A. M., female, aged 41. Severe lumbosacral pain radiating along the left sciatic nerve resulting in complete incapacitation. Marked improvement after only one week of treatment; at the end of one month the patient experienced no pain or stiffness unless greatly fatigued at the end of the day.

Case 6. J. A. V., female, aged 70. A history was elicited, going back many years, of a gradually progressive swelling of the left hip, knee and foot, accompanied by pain resulting in extreme difficulty in walking. The left dorsalis pedis pulse could not be felt. After one week of treatment the pain had diminished considerably, and the circulation had improved reducing the swelling of the knee and ankle so that the dorsalis pedis pulse was easily palpable. The improved circulation was also manifested by a reduction in the uric acid content of the blood.

SUMMARY

1. The relationship between rheumatic and arthritic disorders and the state of the capillary bed is discussed.
2. The place of histamine in the treatment of these conditions is described.
3. The literature is briefly reviewed.
4. Six cases treated with a histamine ointment combined with a high vitamin diet and an autogenous vaccine are described.

CONCLUSIONS

Histamine ointment of suitable composition and properly applied is a valuable adjuvant in the treatment of the arthritides. Its use is fol-

lowed by definite relief after the first few applications.

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CARDIAC REVIEW OF 1937

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In the previous cardiac reviews of 1934,¹ 1935² and 1936³ no emphasis was placed on any portions of the reviews. This year it may be pointed out that in spite of the continued appearance of innumerable articles on the heart and its disturbances, the majority in 1937 were on certain subjects which have been partially or wholly overlooked previously. The electrocardiogram continues to receive entirely too much emphasis. The symptoms and signs of heart disease are beginning to be carefully analyzed again. Congenital, bacterial, rheumatic and syphilitic heart disease are being carefully studied; hypertensive and coronary arterial heart disease are receiving the most intense study which they continually require because of their high incidence. The

miscellaneous causes of, or the factors associated with heart disease, such as pregnancy, trauma and nutrition, were fully emphasized in 1937. The various types of pericarditis have been considered as well as the diagnosis of dissecting aneurysm of the aorta, in the hope of establishing a better prognosis for these patients. New trends in therapy were the introduction of mercurial suppositories for cardiac edema and the intravenous administration of theophylline ethylene diamine in Cheyne-Stokes respiration.

1. SYMPTOMS AND SIGNS

Bourne, Scott and Witthower⁴ examined 57 cases with cardiac pain and 33 cases of organic disease without pain from the physical and psychological point of view. Evidence of some psychological abnormality was shown in 19 out of the 26 cases of angina of effort, in 9 out of 9 cases of spasmodic angina of effort, in 21 out of 23 cases of angina innocens, and in 11 of 23 patients without pain. It was suggested that the severity of pain may itself be a causative factor in the production of a psychoneurotic state. Levy⁵ noted that in certain persons unduly susceptible to caffeine because of increased nervous irritability or for some unknown reason, coffee may induce cardiac pain; this type of pain occurs predominantly in persons with apparently normal hearts; the discomfort caused by tobacco is more frequent in patients with diseased coronary arteries who have already experienced spontaneous attacks. Wood and Wolferth⁶ use the term trepopnea for the phenomenon observed in certain cardiac patients who can lie comfortably in one recumbent, usually the right lateral, but cannot tolerate another recumbent position. They⁷ believe that trepopnea is an etiological factor in the production of paroxysmal nocturnal dyspnea, and this supplies an explanation for the onset of attacks in certain cases where formerly no adequate cause was recognized. Gauss⁸ detailed four cardiovascular diseases that produce pronounced gastrointestinal symptoms at times which may mimic any type of acute abdominal disease, the conditions being coronary disease, congestive heart failure, endocarditis and arteriosclerosis. Hilton⁹ stated that in the majority of patients complaining of palpitation, no organic disease is discoverable; yet in a series of 564 cases of cardiac disease, palpitation was complained of in 387 (68%). of which 123

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(22%) had auricular fibrillation. Loewenberg and March¹⁰ reported the occurrence of persistent hiccoughs, appearing only after severe strain and disappearing after a period of complete rest, as the sole symptoms of thoracic aneurysm in a 54-year-old male. Messinger¹¹ estimated the cardiac function by simple clinical methods in 200 cardiac cases and 100 controls and offered the clinical aphorism that in an organic cardiac case manifesting tachypnea after exercise, a relatively slow pulse rate after exercise is more indicative of a severe lesion than a fast one. Dressler¹² stated that the pulsatory movements of the thoracic wall are essentially caused by the effect of change in shape and diminution in volume of the heart. Hypertrophy and dilatation of the right chamber in association with the dilatation of the left auricle, as encountered in cases of lesions of the mitral valve of a severe degree, lead to a forceful systolic propulsion of the precordial area near the sternum. Pulsatory movements of the whole chest in a frontal direction are caused by a compensatory effect of both types of pulsations; this is observed when there is marked hypertrophy of the left ventricle, tricuspid regurgitation, associated with aneurysmal dilatation of the left auricle to the right. Hunter,¹³ judging from the experience of the life insurance companies, stated that a functional murmur should not be disregarded after middle life. The day has passed, he added, when a murmur, apparently organic, heard by a reliable examiner, in recent years is entirely disregarded in valuing the risk. Time and again a man dies of heart disease a year or two after the most careful examination had failed to disclose any defect, yet there was a history of such a finding at an earlier examination. Maliner and Okin¹⁴ found the epinephrine test, subcutaneous injection of a 1:1000 solution, most useful for intensifying the murmurs of probable valvular heart disease and also in accentuating the murmurs of the definite organic valvular lesions. Steele¹⁵ observed elevation of the rectal temperature following mechanical obstruction to the peripheral circulation and felt that this is consistent with the belief that elevation of the rectal temperature encountered in the course of heart failure may be due to slowing of the peripheral circulation.

2. METHODS OF CARDIOVASCULAR EXAMINATION

1. *Electrocardiography*: Katz¹⁶ and his collaborators presented evidence that the electrocardiogram is a record of events in favored rather than in all regions of the heart, and that the precordial leads are one method of bringing out lesions in regions of the heart which are not favorably situated for notice by the ordinary distant leads. Willcox and Lovibond¹⁷ reported that by means of the four-lead electrocardiogram they investigated 102 cases of cardiac pain but used a technic which differs from the original method; the chest leads were reversed, the left-arm electrode in the anterior position, which gave a Lead IV comparable with the standard leads. In 8 out of 62 cases of angina of effort Lead IV proved evidence of myocardial disease not given by the three-lead tracings. Master, Dack, and Jaffe¹⁸ pointed out the fact that the occurrence of an upright or an inverted T-wave is normal, deprives the chest lead of definite value in the examination of children and care must be taken in evaluating such changes even in serial records. Sorsky and Wood¹⁹ stated that in view of the difficulty of fixing the exploring electrode in a constant position in relation to the underlying heart, great caution must be exercised in the interpretation of serial chest lead electrocardiograms. Hall²⁰ pled for the adoption of Roth's method (the right arm electrode being left in situ while the left arm terminal is attached to the button electrode over the apex or, when the exact position of the apex could not be localized, over the left fourth intercostal space near the sternal border) as the standard Lead IV, because it is safer for those seriously ill and gives the familiar deviation similar to that in the three standard leads. Van Nieuwenhuizen and Hartog²¹ emphasized the importance of the chest lead for the differential diagnosis of acute intrathoracic or abdominal deviations from coronary thrombosis. Sodeman²² reported the occurrence of an upright T-wave in Lead IV in a 26-year-old female without other evidence of heart disease. Mortensen²³ described two cases of acute myocarditis following undulant fever and influenza respectively. In the first, changes in the precordial leads during the last part of the course were the only certain signs of the heart disorder, the changes continuing for a time after the extremity leads became normal; in the second

case changes in the precordial leads were an important aid in diagnosis. Whitten²⁴ reported that normal waves in the midaxillary leads are similar to those of the limb leads and all deviations from the normal appear to have the same significance as in the standard leads. Brody and Rossman²⁵ reported two additional cases of electrical alternans which consists of a regular alternation at equal intervals, in contour or amplitude, or both, of successive phases of the electrocardiogram. These findings have grave prognostic significance. McGee, Conrad and Wilson²⁶ reported the case of a 39-year-old coal miner with a 12-hour history but in shock, and an electrocardiogram showed inversion of the T-waves in Leads 2 and 3 with elevation of the S-T interval in those leads as well as in Lead IV. Autopsy revealed chronic "kissing" duodenal ulcers, one of which perforated, the coronary vessels were normal and the heart showed no disease. Bellet and Dyer²⁷ noted the electrocardiographic changes, especially inverted T-waves during and after emergence from diabetic coma; the most abnormal tracings were observed not during the coma but about 24 hours later when the patient was clinically improved and out of the acidotic state.

2. *Roentgenography*: Babey²⁸ stated that the esophagus may be displaced by cardiac lesions other than mitral stenosis, such as by congenital heart disease, aortic stenosis and incompetence, hypertensive heart disease, auricular fibrillation and flutter and complete heart-block. Hirsch and Schwarzschild²⁹ described an apparatus, the cardiocairograph, which synchronizes the roentgen exposures of the chest with the cardiac action current phenomena. Schwedel³⁰ stated that the use of the barium filled esophagus serves to differentiate elongation of the transverse portion of the aortic arch from left auricular enlargement. Levitin³¹ reported three cases of heart failure with interlobar effusions, the fluid disappearing with the general improvement of the patient and not requiring any specific therapy other than the treatment of the decompensation. Edeiken and Wood,³² from an orthodiagraphic study of 291 college students who had no evidence of heart disease, felt that measurements of heart size as well as empirical determinations of cardiac shape should be interpreted with a knowledge of their limitations; in many instances the presence or absence of pathological

enlargement of the heart cannot be determined on the bases of roentgen measurements alone.

3. *Other Methods*: Candel and Rabinowitz³³ found that the circulation time is of greater significance in prognosis than the venous pressure; the mortality rate increases as the velocity of the blood flow decreases, and when the circulation time is 30 seconds or more, the mortality is over 50% in one year. Berger³⁴ stated that a rise in venous pressure roughly parallels the development of congestive heart failure but does not antedate the appearance of clinical symptoms. Riseman and Brown³⁵ found a moderate elevation of the corrected sedimentation index in over 50% of the patients with angina pectoris; furthermore an elevated sedimentation rate is one of the most constant manifestations of coronary thrombosis, and this reflects the course of the disease and is an aid in following the progress of the patient.

3. INCIDENCE OF HEART DISEASE

Based on a study of 3,418 cases of which 60% had postmortem examinations, Willius³⁶ reported a relative incidence of coronary disease, 33.5%; hypertensive heart disease, 26.8%; rheumatic heart disease, 27.2%; syphilitic cardiovascular disease, 6.3%; adiposity of the heart, 2%; chronic adherent pericarditis (non-rheumatic), 1%; calcareous aortic stenosis, 1.1%; and congenital heart disease, 2.1%. Arenberg³⁷ presented 485 cases of heart disease among seamen with the following important etiologies: hypertension, 41.6%; rheumatic, 21.3%; atherosclerotic, 18%; and syphilitic, 11.7%. Whishaw³⁸ reported that the causation of symptoms referable to the heart in a study of 435 patients was hypertension, 56%; functional, 20%; coronary disease, 7.3%; thyrotoxicosis, 6.6%; rheumatic heart disease, 4%; syphilis, 1.6%; cor pulmonale, 1.3%; miscellaneous, 3.2%.

4. ETIOLOGY OF HEART DISEASE

1. *Congenital*: Dry³⁹ classified congenital heart disease according to the anomalies associated with septal formation, those with torsion of the cardiac tube and with development of the bulbus cordis, those associated with development of the aortic arches, dextrocardia, and anomalies of the coronary vessels. King⁴⁰ stated that hypertension in the arms is the rule in cases of coarctation of the aorta, but the presence of

hypertension cannot be relied upon as a certain index to this condition. Wechsler and Gustafson⁴¹ reported the case of a 30-year-old male who had two common complications of the adult type of coarctation of the aorta which are of clinical importance, namely, its association with congenital bicuspid aortic valve and the tendency for the malformed valve to become the seat of an infective endocarditis due to *Streptococcus viridans*. Benkwitz and Hunter⁴² remarked on the ability of the circulatory system to compensate for major vessel obstructions and the toxic effects of infection as illustrated by the case of a 67-year-old male with combined infantile and adult coarctation of the aorta and coincident occlusion of the superior vena cava who died of carcinoma of the urinary bladder with retention and ascending infection. Maycock⁴³ reported an unusual instance of congenital narrowing and complete occlusion of the midabdominal segment of the aorta, immediately below the renal branches, in an 18-year-old female who succumbed from a perforated cecal abscess due to amebic dysentery. Gross⁴⁴ suggested that a bicuspid aortic valve in an adult should be considered as congenital only when associated with other congenital malformations of the heart. He described the pathogenesis of the lesion on a rheumatic basis and drew attention to the compatibility of the view with the predisposition of the valve with this deformity to subacute bacterial endocarditis. Robinow⁴⁵ reported a proved case of dextroposition of the heart with right ventricular hypertrophy because there was marked left axis deviation in the electrocardiogram, which illustrates again that left axis deviation is not necessarily associated with a shift of the anatomical axis to the left or with left ventricular preponderance. Snelling⁴⁶ reported the occurrence of one of the most common forms of congenital heart disease, patent ductus arteriosus, in sisters, which is a rarity. McGuire and Goldman⁴⁷ found an apparent increased velocity of blood flow in cases of congenital heart disease with septal defects having a right-to-left shunt. In 3 such cases it averaged 4.2 seconds, while in 5 patients with acyanotic congenital heart disease, most of whom were thought to have uncomplicated interventricular septal defects, the average circulation time was 12.1 seconds.

2. *Rheumatic*: Paul and Dixon,⁴⁸ from a

survey among American Indian school children, showed that in the cold though relatively dry climate of Wyoming and Montana the prevalence of rheumatic heart disease is high (4.5%), in comparison with rates determined in New England (2.2%), whereas in the warm though dry climate of southern Arizona it is correspondingly low (0.5%). Rothe, Lingg, and Whittemore⁴⁹ stated that the valvular heart disease which ultimately develops in cases in which the initial affection is chorea is due not to the chorea but rather to polyarthritic and cardiac manifestations associated with its recurrences in children. Parrish, Taran and Starr⁵⁰ reported that of 28 cases of pure chorea followed clinically over a period of many years, 57% showed cardiac involvement. Cahan,⁵¹ from the medical records of 391 Philadelphia school children with rheumatic heart disease, stated that the prognosis depends on the early discovery of the condition, the degree of cardiac enlargement, the state of the myocardium and the particular valve involved, the rhythm, the exercise tolerance, the education and preparation for a vocation with minimum additional damage to the heart. Wolffe and Digilio⁵² stated that friction-like, at times somewhat musical, murmurs appear to be the earliest objective sign in low grade childhood rheumatism and are apparently due to pericarditis at the base of the heart in the region of the origin of the great vessels; it is best heard in the region of the left second and third costosternal junctions, although it may also be heard at the apex, and may be inconstant and transitory. Graef, Berger, Bunim and de la Chapelle⁵³ reported that among patients who died of rheumatic heart disease in congestive failure, active auricular endocarditis was observed twice as frequently in those with auricular thrombosis as in those without this, although the incidence of auricular fibrillation and the degree of mitral stenosis were about the same in both groups. Conner⁵⁴ stated that it seems very unlikely that the immunity of the valves to rheumatic damage in the adult years is to be explained on the basis of variations in their vascular supply, and one seems forced to the conclusion that the difference in their reaction to rheumatic fever in childhood and in adult life is determined probably by the difference in the behavior of the rheumatic infection itself in the two age periods. Levy and Golden⁵⁵ summarized 11 years' experience with

48 cases of rheumatic heart disease treated by roentgen irradiation of the heart and noted that in a considerable number the evidence indicated that this therapy exerted a favorable effect upon lesions in the heart and upon the course of the disease; cases with low grade activity and without signs of congestive heart failure appeared to be the most benefited.

3. *Bacterial*: Brink and Smith⁵⁶ reported a clinicopathological study of 37 cases of subacute bacterial endocarditis which was more common among males than among females; the majority of patients were in the third, fourth and fifth decades of life; and embolic processes were common. The spleen was invariably enlarged, even though not palpable; a rheumatic infection commonly preceded; the degree of previous valvular damage was usually mild; the mitral valve was more frequently involved than any other valve; and in no case was the duration of symptoms more than one year and in 80% of the cases it was six months or less. Hamman⁵⁷ stated that those who are accustomed to follow patients from the ward to the postmortem room soon become convinced that in the clinic many cases of bacterial endocarditis are not recognized, and, from the character of the lesions there observed, that many patients recover and then live on for years with the usual evidence of a valvular defect. Kilgore⁵⁸ related the failure of human immune transfusion and serum therapy in three cases of streptococcus viridans endocarditis where groups of volunteers, immunized with the patients' organisms, contributed blood by direct transfusion or (when compatible) blood serum or blood for intramuscular injection. All three were "improved" in their own and their families' opinion, but in none could be seen any beneficial effect other than temporary relief of the anemia and the psychic uplift to be expected from any strange and elaborate therapy. Blood cultures remained positive; embolic phenomena and irregular fever continued; and the patients gradually failed and died in the usual course of the disease. Williams⁵⁹ stated that in a proved case of gonococcal endocarditis, artificial therapy resulted in sterilization of the blood and as established at autopsy, sterilization and healing of the endocardial vegetations, death having been due to co-existing syphilitic cirrhosis of the liver and uremia. Smith⁶⁰ reported three cases of co-existing syphilis of the aorta and bacterial endo-

carditis; in the first case the vegetative endocarditis developed upon previously normal aortic valve leaflets; in the second case the syphilitic valve damage was a predisposing cause to the bacterial infection; and in the third case it was superimposed upon an aortic valve lesion which was probably the seat of old healed rheumatic disease with aortic stenosis. Sachs and Isaacson⁶¹ cited the case of a 52-year-old female, who recovered from a bilateral lobar pneumonia, later developed an ulcerative pneumococcal tricuspid valvulitis on which large soft vegetations quickly developed and in turn gave rise to septic emboli, with infarctions in the lungs. Mendel and Saibil⁶² reported the occurrence of an "embolic" manifestation long before recognizable evidence of endocarditis or other of the common clinical features in a 13-year-old girl. Grossman and Lieberman⁶³ commented on the unusual clinical manifestations of subacute bacterial endocarditis; in one case a pericarditis was present concomitantly with it, which was clinically believed to be a manifestation of active rheumatic infection but at autopsy it was found to be an extension of infection from a mycotic aneurysm of the sinus of Valsalva to the pericardium. In the second case auricular fibrillation preceded the endocarditis and persisted throughout the course; in addition this patient had a non-palpable spleen and a polycythemia, a combination of three rare findings. In the third case, which was mistaken at first for a perinephritic abscess because of intermittent fever and hematuria, autopsy showed that he had a bacterial endocarditis and a splenic infarct which had become secondarily infected; the abscess broke through the diaphragm and caused a fatal empyema. Buddingh and Anderson⁶⁴ described the occurrence of acute vegetative endocarditis caused by *Bacillus diphtheriae* in a 16-year-old male with severe nosebleeds. Wells⁶⁵ related that a 50-year-old male appeared to have pneumonia and had a thoracotomy for empyema; continued illness and petechiae led to the blood culture which revealed *Bacillus paratyphosus* B.; death occurred 3 months after the illness started and autopsy revealed an acute vegetative mitral endocarditis and culture of the postmortem blood revealed the same organism. Fish, Hand and Keim⁶⁶ reported a case of generalized infection due to *Pseudomonas aeruginosa* (B. pyocyaneus), in a 71-year-old male, and associated with bacterial

endocarditis; the origin of the infection was found in the hypertrophied prostate gland, which contained suppurative foci and Gram-negative bacilli. Chester⁶⁷ reported that a 29-year-old female with positive *Streptococcus viridans* blood cultures and clinical signs of a bacterial endocarditis, had a continuous murmur at the pulmonary area and a globular heart, suggestive of a patent ductus Botalli; she was seen for 4 years and in good health at the end of the period, the blood cultures becoming negative. Gross and Fried⁶⁸ reported that in their material 75% of the hearts in cases of subacute bacterial endocarditis has been the seat of a previous rheumatic process, and presented evidence which supports the view that some of these cases were thrown into activity by the superimposed bacterial infection rather than that the activity of the rheumatic process predisposes to the bacterial endocarditis. Nedzel⁶⁹ stated that pressor episodes, the undue accentuation of smooth muscle contraction (a phase associated with undue general or local anoxemia), in the absence of bacteria, can produce lesions which are characteristic of those found in the human heart in endocarditis; bacterial endocarditis may represent a functional stage in which bacterial adhesion and proliferation have been added to the primary change in the endothelial status. McMillan and Wilbur⁷⁰ presented the fifth recorded case of bacterial infection superimposed on a syphilitic aortic endocarditis; this known aortic insufficiency was injecting unsterilized solutions of morphine sulphate into his own veins, which probably was the mode of infection of the superimposed staphylococcic endocarditis. Keefer⁷¹ described and summarized a group of 15 cases of active bacterial endocarditis without bacteremia and found no essential difference in the clinical course of the patients with bacteremia and in those without bacteremia with the possible exception of the fact that the non-bacteremic cases were more apt to have renal insufficiency as the outstanding feature.

4. *Syphilitic*: Wilson⁷² analyzed 211 cases of syphilitic aortitis, proven at autopsy, with regard to the presenting symptoms; in practically every case in which cardiac or respiratory symptoms were present they have been shown to be due to some factor other than uncomplicated syphilitic aortitis—either to an extension or complication of the syphilitic process or to some

coexisting disease. Cole⁷³ reported that in his own series of patients followed from 3 to 20 years none developed aortic regurgitation or aneurysm provided they had been adequately and regularly treated during the early stage of syphilis. Kemp and Cochems⁷⁴ studied the use of the teleroentgenogram in the diagnosis of early syphilitic aortitis but concluded that there is no evidence that the diagnosis of uncomplicated syphilitic aortitis can be made by teleroentgenography alone. They⁷⁵ suggested that the physical exertion imposed by occupation influences directly the development of the graver forms of syphilitic aortitis as aneurysms occurred four times more frequently among individuals whose work demanded some degree of physical labor than among those whose occupations were sedentary. Stokes and Anderson⁷⁶ stated that the distinctive features of the American alternating continuous system of treatment of early syphilis, the best prophylaxis against syphilitic aortitis, are the complete absence of rest intervals, purposeful or otherwise, at least during the arsphenamine-heavy metal phase; a duration or prolongation of treatment to a full 65 weeks, or failing that, every effort to keep the treatment continuous for at least the first 6 to 8 months; the administration of 32 adequate doses of an arsphenamine intravenously with weekly intervals between injections in courses of not less than 8 injections for the first and six for the second, third, fourth and fifth courses; the arsenicals alternating with courses of weekly intramuscular injections of not less than 0.2 gm. bismuth salicylate or its insoluble equivalent to a total of 60 intramuscular injections. Hood and Mohr⁷⁷ studied the microscopic pathologic appearance of the aorta in treated and untreated patients with syphilitic aortitis and found no difference in the findings; whatever may be the mechanism of clinical improvement in well-treated patients with cardiovascular syphilis, this improvement is not associated with any readily demonstrable anatomic evidence of healing of the lesion of the aorta which is not present in untreated cases of the same duration of infection. Cossio, Vivoli and Caul⁷⁸ reported the case of a 35-year-old male who had a typical attack of ventricular tachycardia due to infarction of the interventricular septum; the lesion was found to be of the sclero-gummosus type with endocarditis, the *Treponema pallidum* being found in the lesion.

5. *Thyrotoxic*: Friedberg and Sohval⁷⁹ studied the occurrence and pathogenesis of cardiac hypertrophy in 27 fatal cases of Grave's disease in which the hearts were studied anatomically. Cardiac hypertrophy was found in 14 and absent in 13, and the six hearts showing the greatest degree of hypertrophy occurred in patients with well-marked right heart failure, associated with, in some cases, hypertension, severe coronary sclerosis and narrowing, or established auricular fibrillation. They concluded that cardiac hypertrophy in uncomplicated Graves' disease is quite uncommon and of slight degree.

6. *Myxedema*: Ravin⁸⁰ stated that the incidence of recognition of cardiac enlargement due to myxedema increases with the greater care in examination and more frequent use of the roentgen-ray; this enlargement, at times quite marked, usually involves both sides of the heart, but thyroid therapy decreases the size. In some cases the heart will decrease in size after thyroid therapy even though it was apparently normal in size before treatment; if the thyroid is stopped the heart enlarges and it shrinks again on resumption of thyroid. Allen⁸¹ presented a typical case of myxedema heart in a 42-year-old female who had the cardinal features of marked increase in the diameter of the heart, feeble pulsation and electrocardiographic complexes of low voltage with flattened P and T-waves. There was a marked decrease in the size of the heart, improvement in function, and changes in the electrocardiogram following thyroid therapy.

7. *Hypertension*: Murphy, Woods and Grill⁸² stated that every hypertensive must be looked upon as a candidate for ultimate failure, which as a rule occurs within 5-15 years after the onset of hypertension; during the earlier period, which may vary months to years, the main object is to safeguard the hypertrophic heart from influences which precipitate heart failure. Arkin⁸³ reiterated the fact that essential hypertension is one of the chief causes of cardiac failure and that 65% of hypertensives die from this cause. Gross and Spark⁸⁴ analyzed the coronary and extracoronary factors in hypertensive heart failure and stated that cardiac hypertrophy is the feature common to cases of congestive heart failure irrespective of the presence or absence of major coronary artery disease; a collateral circulation, both intracardiac and extracardiac, may play a role in preventing failure of the hyper-

trophied heart, but congestive heart failure is failure of the heart which fails to undergo further hypertrophy. Riesman⁸⁵ stated that moderate cardiac hypertrophy is not unfavorable, but that cerebral accidents even of apparently trivial origin as well as anginal pain and retinal hemorrhages are all ominous signs. Ashe and Mosenthal⁸⁶ stated that people with hypertension do not habitually eat more protein or more salt than normal persons; and that there is no evidence to show that a low protein diet, followed by a hypertensive subject, will materially reduce the blood pressure provided there is no anemia. Van Nieuwenhuizen and Hartog⁸⁷ were of the opinion that the principal causes of the occurrence of left axis deviation in the electrocardiogram in hypertension are a clockwise rotation of the heart in its longitudinal axis and dilatation of the left ventricle. Roth⁸⁸ presented an electrocardiographic pattern of the apical chest lead tracings in certain cases of hypertension with cardiac enlargement as the ventricular complex in this tracing is characterized by a QRS which consists predominantly of a large negative component and by an upright T-wave. The pattern is essentially a modified standard Lead 3, and is due, apparently, to the axillary situation of the exploring electrode; therefore, in cases of left heart enlargement due to hypertension the left pectoral lead is the chest lead of choice and the so-called apical lead should be avoided. Wolffe and Diglio⁸⁹ used pancreatic extract in the treatment of hypertension and obtained symptomatic relief in many patients whose blood pressure remained at constant, original, high levels. Page and Huer⁹⁰ noted that although marked anatomic change was present in the vessels of some of the patients, this did not prevent a marked fall in the arterial pressure which persisted long after the patient had recovered from the immediate effects of section of the anterior nerve roots; this demonstrated that anatomic changes in the vessels do not account for the persistence of hypertension. Baker and Brunsting⁹¹ reported a case of dermatitis medicamentosa resulting from the administration of sulfocyanates in the treatment of hypertension; this drug continues to be used despite the known toxic manifestation although much of the early enthusiasm for its use has waned. Roth⁹² stated that significant decreases in the blood pressure of patients with essential hypertension were not produced by surgical methods

except when extensive abdominal sympathetic denervation was effected; when less radical operations were performed, the magnitude of the decrease seemed roughly proportional to the extent of the denervation.

8. *Pulmonary*: Parkinson and Hoyle⁹³ investigated 80 patients suffering from a high grade of emphysema, chiefly in regard to the cardiovascular system, and in particular to the size and shape of the heart as judged by radiology. The cardiac factor in emphysema alone was seldom emphasized except late in the disease, and then not always, or unless there was a cardiac lesion of another sort. A complicated etiology was so common that it was demonstrable in more than 50% of the series, and this complication was predominantly hypertension; the cardiac symptoms and signs in emphysema seemed more likely to be due to hypertension than to the direct effect of emphysema on the heart. Cardiac failure from emphysema alone was surprisingly rare; and when it occurred it was with normal rhythm and edema, and as a very late event that was invariably terminal. Examples of failure apparently due to emphysema were most often explained by associated cardiovascular disease, usually, hypertension, and in such, congestive failure recurred.

9. *Coronary*: Wolferth⁹⁴ stated that the course of events after coronary occlusion, particularly the occurrence of myocardial infarction, depends on such factors as the size and position of the vessel obstructed, the rapidity of development of occlusion and the integrity of the adjacent circulation. White⁹⁵ suggested that we avoid the definite diagnosis of coronary disease unless we establish, first the presence of angina pectoris without syphilitic aortitis or extensive aortic valve disease; secondly the occurrence of coronary thrombosis past or present; or thirdly, the existence of bundle branch or auriculoventricular block or of characteristic T-wave changes in the electrocardiogram. Smith⁹⁶ compared the incidence of coronary sclerosis among physicians with members of other occupations, from which he concluded that occupation does influence the incidence of coronary sclerosis since it occurs four times as often among physicians as among laborers and farmers. The Jacksons⁹⁷ feel that many attacks now diagnosed as coronary thrombosis (which may or may not be present) are really due to pulmonary embolism (or pul-

monary thrombosis). Feil⁹⁸ observed 15 cases of coronary thrombosis with preliminary mild anginal attacks preceding the clinical picture of thrombosis by hours or days—usually from 12 to 48 hours; this pain was not dependent on effort or motion, was more or less continuous and of an oppressive or burning character. Sampson and Eliaser⁹⁹ presented 29 cases of acute coronary artery occlusion exhibiting attacks of precordial pain of prolonged duration, which seemed to represent a precursor phenomenon of characteristic occlusion. Master, Dack and Jaffe¹⁰⁰ made a statistical study of over 800 attacks of coronary thrombosis to determine what factors initiated the thrombosis; it occurred in all walks of life and in all types of occupations, although 40% of the attacks occurred during rest or sleep; this was probably a coincidence, since half the day is ordinarily spent in these states. Exertion, even severe, was of little or no significance in the precipitation of an attack, and this held good for walking, straining at stool, coitus and playing golf. Excitement, ingestion of food, infection, tobacco, alcohol, heart failure, time of day and season of the year were found to have no significance.

Durant¹⁰¹ reported the occurrence of coronary thrombosis in seven young patients ranging in age from 22 to 35; all were males, none were overweight, and none engaged in a professional occupation; five of the seven survived their attacks by at least six weeks. Blaze¹⁰² reported the youngest case of coronary thrombosis on record; a 23 year old laborer was seized with severe pain in the chest and left arm, collapsed and expired 1½ hours later; autopsy revealed a fresh thrombus in the descending branch of the left coronary artery. Smith and Hinshaw¹⁰³ reported coronary thrombosis affecting a patient 31 years of age who had a known hypertension for five years; he recovered from the infarction, but following this a very severe progressive angina pectoris developed. Glendy, Levine and White¹⁰⁴ studied coronary disease in 100 patients under 40 and stated that the duration of life for those who died and the life expectancy of the survivors is greater than for patients of all ages with coronary disease, but the susceptibility to sudden death is just as great. Feinstein and Lieberman¹⁰⁵ noted that occasionally a patient will not demonstrate a characteristic pattern of serial changes in the conventional leads and will do so in the chest

leads following coronary thrombosis. White¹⁰⁶ discovered a new record in longevity after coronary thrombosis in a clergyman and active preacher whose first myocardial infarction occurred at age 48, his second at 51, his third at 59 and his fourth at 63; he died of congestive heart failure at the age of 73, in his 25th year after his first coronary thrombosis, and autopsy revealed multiple areas of infarction in the left ventricle. Palmer¹⁰⁷ studied the prognosis following recovery from coronary thrombosis and noted that the duration of life averaged 4.2 years in 65 patients known to have died, and that hypertensives appeared to have a somewhat better outlook in this regard than non-hypertensives; cardiac enlargement was a most important factor in causing restriction of activity, the expression of its influence being dyspnea on exertion and congestive heart failure. Master, Duck and Jaffe¹⁰⁸ noted that congestive heart failure occurred in 66% of 140 patients with coronary thrombosis: the mortality rate was 30% in the presence of heart failure and only 4% when it was absent. Palmer¹⁰⁹ studied the size of the heart following coronary thrombosis and concluded that by far the most important factor causing enlargement proved to be hypertension, which was held to be the single or predominant cause in more than 80% of all cases with enlargement. King¹¹⁰ stated that in cases observed some time after recovery from coronary occlusion the appearance of paroxysmal nocturnal dyspnea, acute pulmonary edema and congestive failure, especially with a slow heart rate and normal rhythm, and the presence of considerable cardiac enlargement or anginal attacks on slight exertion, indicated impending complete cardiac failure. Boyd and Werblow¹¹¹ submitted additional evidence to support the idea that major coronary thrombosis may occur without pain; sudden inexplicable increased congestive failure in a known cardiac should arouse suspicion of coronary thrombosis. Blake¹¹² stated that hyperglycemia and glycosuria are common to the syndrome of coronary occlusion (20%) as noted in 74 cases, but such changes are of a transitory nature usually and require no insulin. Gold, Travell and Modell¹¹³ stated that the routine use of theophylline with ethylenediamine (aminophylline) in the treatment of coronary thrombosis received no support from their experimental

work. Master, Duck and Jaffe¹¹¹ stated that the cardiac rate, whether or not the rhythm was regular, is a very significant factor in the outcome of an attack of coronary thrombosis; if the ventricular rate is above 120 or below 40 the outlook is poor. Hall¹¹⁵ reported the case of a fatal air embolism which originated in the rupture of a pleural adhesion as the result of an artificial pneumothorax.

Stanley¹¹⁶ reported the case of a 61-year-old female who had a coronary thrombosis and the infarct of the interventricular septum perforated; although it has been stated that rupture of the septum probably imposes no great additional burden on these hearts which usually are extensively involved by infarction, it was his impression that the patient was greatly shocked by the rupture and that her clinical course was downhill thereafter. Akerson, Dias and Monroe¹¹⁷ noted that coronary occlusion in the aged often occurred without pain and was followed quickly by death. Blumer¹¹⁸ emphasized the importance of embolism as a complication of cardiac infarction as such phenomena are clinically recognizable in about 14% of such patients. Dozzi¹¹⁹ stated that in suspecting the possibility of coronary thrombosis as the etiologic factor in a case of hemiplegia, we must bear in mind the atypical forms of coronary thrombosis and must not lose sight of the fact that in cases with congestive heart failure the lesion might be masked by dyspnea.

10. MISCELLANEOUS

(a) *Pregnancy*: Enghring and Sutton¹²⁰ stated that compensated heart disease is no contraindication to marriage and child-bearing as adequate pre-natal supervision and vaginal delivery in the absence of obstetrical indications aids definitely toward a favorable outcome. Hamilton¹²¹ discussed a series of 42 fatalities occurring among more than 750 Class I cardiacs from which he indicated that some deaths are unavoidable, especially those due to pulmonary embolism and bacterial endocarditis; this unavoidable death rate is low but many times higher than the rate for women with sound hearts. He¹²² stated that labor can produce heart failure in cardiacs, but the present feeling is that cardiacs, even sick cardiacs, stand labor surprisingly well. Consoli¹²³ stated that the persistence of decompensation in pregnant cardiacs results in the spontaneous pro-

duction of abortion, so that the induction of abortion should be reserved only for the few cases showing very grave signs of myocardial changes. Harris¹²⁴ studied a series of 100 cases of heart disease with normal rhythm complicating pregnancy from which he stated that pregnancy is contraindicated in those cases of heart disease with normal rhythm in whom the exercise tolerance broke down early in a previous pregnancy, or where the heart is considerably enlarged. Lamb¹²⁵ feels that in addition to a history of previous decompensation or auricular fibrillation, the following indications for the interruption of pregnancy should be added: A heart size of more than 55% of the diameter of the chest, a long rumbling diastolic murmur at the apex, signs of active rheumatic infection, and rheumatic heart disease of more than 15 years' duration. Stander and Kuder¹²⁶ stated that the treatment in Class I and Class II(a) pregnant cardiac patients consists of hospitalization two weeks before term, followed by spontaneous delivery or in a small number forceps at the beginning of the second stage; the severe types, Class II(b) and Class III, must be hospitalized earlier in pregnancy in order to decide whether the pregnancy should be allowed to continue, and if so, delivery should be effected by forceps unless the patient falls in Class III, where it is advisable, after adequate hospitalization and digitalis to perform a Cesarean, followed by sterilization. Teel, Reid and Hertig¹²⁷ presented six cases in which severe non-convulsive toxemia of pregnancy was complicated by one or more sudden paroxysms of dyspnea associated with acute pulmonary edema which closely resembled classical cardiac asthma; the immediate prognosis for these patients was grave but if they survived delivery and early puerperium, the ultimate outlook seemed to be good. Felsen, Schumer and Osofsky¹²⁸ reported the case of a 25-year old female with typical streptococcus viridans aortic endocarditis complicated by pregnancy, who delivered a live uninfected fetus but died 16 days after the normal delivery. Gouley, McMillan and Bellet¹²⁹ made a clinical study of seven women having cardiac decompensation in the puerperium, four of whom died and at necropsy showed a myocardial degeneration differing from the lesions ordinarily associated with the current classifications of heart disease; death occurred in three cases following embolism, which had its origin on the

endocardial surface of degenerated heart muscle, but the coronary arteries were normal, and there was no evidence of coronary occlusion in the living patients.

(b) *Trauma*: Schleiter¹³⁰ reported four cases of trauma to the chest, two with cardiac injury and recovery and two involving the aortic valve. A male laborer suffered fractures of the seventh and eighth ribs on the left side and the electrocardiogram showed a 3:1 auricular flutter. A boy, kicked in the chest by a horse, suffered shock and acute right heart failure, but no medical or surgical cardiac therapy was used, and the boy recovered. Another male had a compression of the heart in an auto accident which resulted in a linear tear of the aorta and rupture of the anterior aortic cusp; he died five months after the accident of congestive heart failure. Munck¹³¹ stated that in 22 out of 32 persons who died up to 16 days after trauma due to powerful blunt force, mostly in automobile accidents, he found changes in the heart believed to be connected with trauma; scattered small hemorrhages in the myocardium predominated, and on microscopic examination there was also frequently subepicardial and subendocardial bleedings seen to extend into the underlying musculature. Gissane and Schulenberg¹³² operated successfully on a 23-year-old male 60 minutes after he received a stab wound of the heart and 40 minutes after he received an adequate dose of morphine; at operation after a first wound on the anterior surface of the right ventricle was sutured, a second was found on the diaphragmatic surface of the same ventricle. The clinical picture of tamponade of the heart was not obvious, yet at operation 1200 cc. of blood were collected from the pericardium before suture was begun.

(c) *Nutritional*: Weiss and Wilkins¹³³ indicated that dysfunction of the cardiovascular system resulting from unbalanced food intake is a disease of regular occurrence and reported 120 such cases; the clinical symptoms and signs, the blood chemistry the myocardial changes and the therapeutic responses corresponding to those described in "beri-beri hearts." Taylor¹³⁴ noted that guinea-pigs suffering from scurvy show in their hearts valvulitis, myocarditis and occasionally pericarditis; the lesions resemble those seen in rheumatic carditis only in that they are both a diffuse non-purulent carditis without gross valvular vegetations. Hashimoto¹³⁵ reported a

case of the acute pernicious form of beriberi, showing electrocardiographic evidence of myocardial damage, in which recovery from cardiac failure was prompt after the intravenous administration of 3 mg. of purified vitamin B₁. Weiss and Wilkins¹³⁶ stated that of the vitamins, B₁ deficiency is the most important cause of cardiovascular disturbances; that beriberi with cardiovascular dysfunction is a disease of regular occurrence in the United States, and that cardiac disturbances in human scurvy, with the exception of hemorrhagic pericarditis, and in rickets are usually due to coexisting vitamin B₁ deficiency.

(d) *Arteriovenous Aneurysm*: Price¹³⁷ advised early surgical treatment for removal of the aneurysm, or its obliteration by ligature, in order to prevent cardiovascular changes. Quattlebaum¹³⁸ presented a case of arteriovenous aneurysm showing pronounced electrocardiographic changes prior to surgical cure of the aneurysm; after the operation the tracings showed a remarkably slow return to normal, though clinical improvement was rapid, but the auricular fibrillation did not cease spontaneously after operation yet disappeared with quinidine therapy and showed no inclination to return. Porter and Baker¹³⁹ studied the significance of cardiac enlargement caused by arteriovenous fistula and stated that the enlargement of the artery and vein in the fistulous circuit and the increase in cardiac size are primarily adjustment dilatation; an extreme degree of reducible cardiac dilatation, 21 cm. to 15 cm., can exist over a prolonged period (21 years) with the occurrence of only a minimum amount of cardiac hypertrophy and without development of heart failure.

(e) *Malignancies*: Schnitker and Bailey¹⁴⁰ diagnosed a metastatic tumor of the heart in a 64 year old male who had a bronchus carcinoma which had invaded directly the wall of the right auricle in the region of the sino-auricular node; the diagnosis was made clinically because of the development of auricular flutter. McNamara, Ducey and Baker¹⁴¹ cited the case of metastases to the heart from a primary carcinoma of the duodenum which weakened the myocardium and precipitated cardiac rupture in a patient with rheumatic heart disease who had been decompensated over three years. Doane and Solis-Cohen¹⁴² reported that in a 64 year old male massive metastases to the right auricle of the

heart gave rise to an interesting symptom-complex of first, a recent coronary thrombosis, followed by auricular flutter, and later an A-V block. Smith¹⁴³ diagnosed two cases of neoplastic involvement of the heart on the basis of a pericardial friction rub in one and the presence of A-V rhythm and a definite diastolic murmur which could not be easily accounted for on any other basis in the other.

(f) *Athletics*: Cooper, O'Sullivan and Hughes¹⁴⁴ studied the response of the healthy and diseased heart to exercise and concluded that there is no evidence of permanent change in the heart following training for sports and that extreme physical effort in the trained athlete does not result in damage to the heart. Rosnowski¹⁴⁵ took electrocardiograms of skiers and marchers immediately before, during, and 24 and 48 hours after the strain; various and variable signs developed in the tracings in a small group, but none were of any particular significance. Erdelyi¹⁴⁶ stated that there is no change in size or form of the heart that is characteristic for "athletes' heart" and that the roentgenogram alone cannot serve as the basis for the idea.

(g) *Diphtheria*: Begg¹⁴⁷ investigated a series of 100 cases of severe diphtheria and noted that most of the cardiac abnormalities developed within the first three weeks of the disease; in many cases the exact nature of the abnormality could not be recognized except by the auxiliary evidence of the electrocardiogram; a normal tracing, especially within the first few days of the disease, did not preclude the possibility of sudden circulatory collapse. Thompson, Golden and White¹⁴⁸ reported that among 100 persons who had severe or moderately severe diphtheria from 15 to 20 years ago, no clear instance of A-V or intraventricular block was found; they added that while there are acceptable cases of the development of disturbed conduction during the course of diphtheria and that in very rare instances the disturbance persists permanently, they have as yet no proof that it may develop some years after the illness.

(h) *Others*: Hedley,¹⁴⁹ in a preliminary report on an alleged extensive disability insurance fraud due to a heart disease racket, urged physicians to be on guard against "synthetic" heart disease; the possibility of surreptitious digitalization should be borne in mind, especially in inter-

preting electrocardiograms showing changes compatible with digitalis effects. Norman and Allen¹⁵⁰ feel that it is advisable to treat polycythemia vera if for no other reason than to prevent vascular complications as erythromelalgia, myocardial infarction, angina pectoris, etc., occurred in about 33% of their cases.

5. PATHOLOGY

Myocardial: Golden and Brams¹⁵¹ stated that although only 38 reports of hearts weighing 1000 gm. or more could be found in the literature in the past century, nine such specimens were observed in patients admitted to the Cook County Hospital in the past eight years. Only one of the nine cases was associated with pericardial adhesions, while almost half of those previously reported were supposedly due to pericardial adhesions, either alone or in combination with valvular disease, usually aortic insufficiency. Weiss and Wilkins¹⁵² described two cases of solitary myocardial abscess with perforation; in the first case the abscess ruptured into the right ventricle as well as into the pericardial sac, and in the second case the abscess was localized mainly in the fat tissue at the auricle and ventricle and ruptured into the pericardial sac; in both cases the clinical course did not suggest sepsis and the unexpected cardiac perforation resulted in a fatal circulatory collapse. Cohen and Levine¹⁵³ reported the case of a 64 year old laborer who was ill 8 months with gradual and progressive enlargement of the abdomen associated with shortness of breath; abdominal paracentesis performed frequently offered little aid; x-ray revealed calcification of the myocardium; autopsy revealed an aneurysm of the left ventricle, severe sclerosis of the coronary arteries, with evidence of bone formation in the calcified myocardium.

Endocardial and Valvular: Altschule and Blumgart¹⁵⁴ made the clinical diagnosis of tricuspid stenosis on the basis of marked generalized venous engorgement, cyanosis, slight jaundice, pulsation of the veins and of the enlarged liver, and the presence of typical murmurs to the right of the xiphoid; the high venous pressure was of importance in the formation of cardiac edema and of the orthopnea in these patients. Levine and White¹⁵⁵ reported five cases of severe disease of the mitral valve with congestive heart failure who had as a fatal complication pulmonary infarction without any

clinical syndrome of sudden vascular collapse or any similar episode; it was not uncommon but was difficult to diagnose, and it renders treatment of the congestion very difficult and makes the prognosis grave. Thompson and Levine¹⁵⁶ stated that patients with tricuspid stenosis, in spite of the fact that death occurs as a comparatively early age, are able to tolerate their symptoms considerably longer than are those patients with chronic rheumatic valvular disease in whom the tricuspid valve is not involved. Contratto and Levine¹⁵⁷ indicated that the most distinctive physical findings of aortic stenosis were a loud basal systolic murmur, a systolic thrill near the aortic area, and the detection of calcification of the valve on fluoroscopic examination; once major symptoms developed in this group the duration of life was short, and the common causes of death were congestive heart failure, subacute bacterial endocarditis, and sudden death.

Pericardial: Behrend and Boles¹⁵⁸ presented cases which illustrate the necessity for prompt radical drainage in suppurative pericarditis, of non-surgical intervention in tuberculous pericarditis, and of earlier operation in chronic mediastinopericarditis. Bigger¹⁵⁹ stated that suppurative pericarditis is not rare, but is infrequently diagnosed because, in the absence of characteristic symptoms, it is not suspected and not looked for; it is never primary but always secondary to infection elsewhere except when it results from direct trauma, and the most important antecedent infections are pneumonia with empyema and osteomyelitis with associated infection of the blood stream. Shipley¹⁶⁰ indicated that tamponade of the heart is the most important symptom of pericarditis, yet tamponade may be caused by many extrapericardial conditions. Vander Veer and Norris¹⁶¹ reported that the characteristic electrocardiographic pattern in acute pericarditis consists of an elevation of the R-T segments in the 3-limb leads, which is most striking in Lead II; microscopic study of the hearts in all cases with "positive" electrocardiograms showed definite subepicardial myocarditis. MacFarlane¹⁶² cited the case of a 16 year old girl with acute suppurative pericarditis who three weeks previous to this had a cellulitis of both hands, and the pericarditis was treated only by paracentesis with recovery. Gouley¹⁶³ stated that compression of the pulmonary artery

by constricting pericardial adhesions is characterized by physical signs of stenosis of the pulmonary artery, pulmonary arterial hypertension and adhesive pericarditis. Lassen¹⁶⁴ studied the pathological findings in 57 cases of chronic fibrous adhesive pericarditis, noted among 1,601 autopsies; in 33 cases cardiac insufficiency was assigned as the cause of death, in 17 as a contributing cause, and in seven no sign of cardiac insufficiency was found. Turner and Moore¹⁶⁵ reported the case of a 48 year old woman with chronic adhesive pericarditis who had two cardiolytic operations 21 years apart and is alive and well 25 years after the first and nearly two years after the second operation. Schmieden and Westermann¹⁶⁶ reported that of 22 cases of fibrous constricting pericarditis operated on, 6 (27.3%) had perfect healing with restoration of full ability to work; 6 (27.3%) had very marked improvement and preservation of life after long observation; one died at operation of acute dilatation of the right ventricle; 7 (31.9%) died during the postoperative period; and 2 (9%) died after transitory improvement. Pilcher¹⁶⁷ reported the case of a girl who was operated on for constrictive pericarditis at the age of 20 after having been ill six years; she had been admitted to the hospital 30 times previous to the operation and had been tapped abdominally 42 times, yet in spite of the long period during which severe symptoms had been present, operation gave her complete relief and one year afterwards she was well. Boggild¹⁶⁸ indicated that the best results with surgical treatment in fibrous pericarditis are obtained in slowly developed cases using intrapericardial pericardiolysis with pericardial resection as the procedure of choice. Keefer¹⁶⁹ studied 20 cases of tuberculosis of the pericardium, which may occur as a terminal event during the course of another disease in patients over 40 years of age; such cases frequently present themselves with symptoms and signs of a wasting disease and obscure fever, edema and congestion simulating cardiac insufficiency, multiple serous membrane infections, or miliary tuberculosis. Harvey and Whitehill¹⁷⁰ stated that they had never seen a patient who recovered from an active tuberculous pericarditis developed chronic constrictive pericarditis with the syndrome of "inflow stasis," as they followed 17 cases from six months to seven years, of which nine are known to be well. Cushing¹⁷¹

described a case of a pericardial diverticulum in a 43 year old male; air was injected into the subcutaneous mass and was found in the pericardial cavity; the diagnosis of calcified tuberculous pericarditis was confirmed by the demonstration of tubercle bacilli in the pericardial fluid obtained by aspirating the diverticulum. This patient¹⁷² died of bronchopneumonia and an autopsy revealed a chronic tuberculous pericarditis with anterior extrathoracic pseudodiverticulum (communicating abscess) of the pericardium, chronic cardiac compression and extreme cardiac deformity. Martin¹⁷³ submitted three patients to section of the left phrenic nerve for adhesive pericarditis as he believed that too little weight has been given to the damaging effect on the heart of diaphragmatic adhesions. Beck¹⁷⁴ believes that adhesions to the heart are silent and incidental, that there may be no reason for their recognition clinically, and that there is no reason to operate for their correction; further, that adhesions to the heart do not produce dilatation of the heart, failure of the heart, or hypertrophy of the heart. Freedman¹⁷⁵ stated that encapsulated pericardial effusions are most commonly situated on the right side of the heart, and on x-ray examination they may be either hexagonal, semi-circular, or oval in shape with the cardiac pulsations usually absent over the area of encapsulation.

Vascular: McGeachy and Paullin¹⁷⁶ stated that of six patients with dissecting aneurysm of the aorta a correct antemortem diagnosis was made in three, and indicated that an existing hypertension, with perhaps a sudden sharp increase in the arterial pressure, is the provoking cause of rupture in the majority of patients. Glendy, Castleman, and White¹⁷⁷ stated that dissecting aneurysm of the aorta occurs predominantly in males between 40 and 60 years of age in whom there is an antecedent history of hypertension. Blackford and Smith¹⁷⁸ reported the occurrence of a dissecting aneurysm of the aorta in a high-strung, hypertensive fat man, aged 61: death occurred from rupture of the dissecting aneurysm into the pericardium 36 hours after the original break through the intima. Roesler. Gifford and Betts¹⁷⁹ described a new diagnostic sign in dissecting aneurysm of the aorta which consisted in the appearance of an area of pulsation which shifted rapidly, associated with the

rapid change in the roentgenological appearance of the aortic shadow.

6. FUNCTIONAL DISORDERS

Congestive Failure, Including the Use of Digitalis and Diuretics: Bramwell¹⁸⁰ stated that heart failure is a relative term, but it signifies that the supply is unequal to the demand; the latter varies greatly according to the habits and mode of the life of the patient. Palmer¹⁸¹ indicated that there is an intimate relation between cardiac enlargement and congestive failure and supported the view that development of both is the same process. Smith¹⁸² stated that left ventricular failure characterized by the occurrence of paroxysmal dyspnea is a common form of cardiac disability resulting from hypertension, arteriosclerosis of the coronary arteries, syphilitic aortitis and disease of the aortic valve; the dominant effect is on the left ventricle, and may occur before failure of the right ventricle, resulting in pulmonary congestion with perhaps little or no engorgement of the peripheral veins. Stroud and Vander Veer¹⁸³ found no evidence that the glucoside preparations of digitalis, when given by mouth, were quicker in action, more efficient, more prolonged in action or less toxic than standardized whole digitalis leaves. Schnitker and Levine¹⁸⁴ stated that a patient with cardiac disease who is digitalized, and who still shows peripheral edema or free fluid in the body cavities occasionally has symptoms of headache, nausea, vomiting, giddiness and lassitude after diuresis induced with salyrgan or mercurin or theophylline; these symptoms could be due to digitalis intoxication when the body fluids are excreted, if that body fluid contained digitalis substances. Thomson¹⁸⁵ reported that mercurial suppositories (novurit) were successfully employed on 208 occasions with an average diuresis per suppository of 2,360 cc.; the administration of digitalis had no appreciable effect upon the diuretic response to the mercurial suppositories. Herrman and Decherd¹⁸⁶ stated that the mercury suppository constitutes an innovation that has many advantages, and even though the results are not as spectacular as those following intravenous types, yet, even if half as active it would still have a place for itself by virtue of the ease of administration. Stewart and Wheeler¹⁸⁷ indicated that mercupurin appears to be an excellent diuretic drug which is at least equal and

possibly superior to salyrgan as it has the definite advantage that thrombosis or slough do not occur at the site of injection. Poll and Stern¹⁸⁸ stated that when a waterlogged patient under the influence of diuretics begins to fail, one or more of the following conditions may be present: irremediable myocardial insufficiency, a fresh coronary thrombosis, exacerbation of an acute rheumatic carditis, pulmonary infarction, respiratory tract infection, a cerebral vascular accident, true renal insufficiency, oversedation, acidotic coma from the use of acidifying salts in cases with impaired renal function, or the syndrome of restlessness and mental confusion associated with rapid dehydration therapy. Chamberlain and Levy¹⁸⁹ found a preparation of squill (urginin), an effective cardiac remedy, but it offered no advantages over digitalis with respect to its action in myocardial insufficiency. Marais and McMichael¹⁹⁰ used theophylline-ethylenediamine effectively in abolishing Cheyne-Stokes breathing: $\frac{1}{2}$ cc. of a 2 cc. ampule was injected as the respiratory movements began to decline in amplitude, then waiting for the next period of hyperpnoea to decline, the second $\frac{1}{2}$ cc. was given and continued in the same manner until the whole ampule contents had been injected intravenously. Griffith¹⁹¹ suggested that the rules worth following in the use of diet in the treatment of heart disease should be the maintenance of a normal weight and tissue nutrition, a limited amount of protein, and a liberal amount of carbohydrate.

Angina Pectoris: Riseman and Brown¹⁹² noted certain characteristics of importance in the diagnosis of 100 proved cases of angina pectoris; the attacks were sudden in onset, short in duration, involved the anterior chest (including the epigastrium) and inner aspect of the arms, were induced by exertion in the cold, and consisted of a vague sensation of unrest or distress difficult to describe. Fisher¹⁹³ stated that there is no such disease entity as angina pectoris and that the term should be scrapped; all pain in heart disease should be known simply as cardiac pain which may or may not be associated with angina, a sense of constriction, just as angina may or may not be associated with pain. Bourne¹⁹⁴ used three criteria for the diagnosis of angina innocens; the pain is not proportional to exercise, there is no evidence of cardiovascular disease, and that the course of the disease in patients observed carefully proves its innocent

nature. Gold, Kwit and Otto¹⁹⁵ studied the xanthines (theobromine and aminophylline) in the treatment of cardiac pain and their results showed that patients are unable to distinguish the effects of a placebo from those of a xanthine when measures are taken to preclude identification of the agent by any means other than the relief of pain. Riseman and Brown¹⁹⁶ used 15 different drugs in the treatment of 26 patients with angina pectoris and found the patient's estimation of therapeutic benefit indicated that all drugs were approximately equal in value; placebos were just as often beneficial as other medicaments and the response of the patient to medication gave no indication as to the prognosis. Brown and Riseman¹⁹⁷ studied the comparative value of 11 purine derivatives in the treatment of 16 patients with angina pectoris and concluded that theobromine with sodium acetate is by far the least expensive of the effective purine preparations, if one is used. Scott¹⁹⁸ reported two cases of acute spontaneous pneumomediastinum after severe exertion in young boys in whom the chest pain and its radiation into the arms was typical of angina pectoris. Riseman and Brown¹⁹⁹ noted that the majority of attacks of angina pectoris were less than three minutes in duration but practically all the patients believed that the attacks were longer; since the attacks were of such short duration the cessation of pain frequently coincided with the solution of the nitroglycerin tablet. Boas and Levy²⁰⁰ stated that an affection of the shoulder characterized by pain, muscle spasm and limitation of motion occurs commonly in patients with angina pectoris, but the site and radiation of the pain may be determined by extracardiac lesions, such as abscesses of the teeth and spondylitis. Foti²⁰¹ made a study of 20 patients who developed angina after the age of 70 and noted that individual attacks were often comparatively mild but occurred frequently, and were related to walking more than any other single factor.

Paroxysmal Tachycardia, etc.: Campbell²⁰² stated that paroxysmal tachycardia (of any variety) in infants is more likely to be associated with a diseased than with a healthy heart. Weiss and Sprague²⁰³ used ipecac in the treatment of paroxysmal auricular tachycardia; in 11 cases attacks were relieved following the oral administration of doses from 4 to 32 cc. of the syrup

of ipecac. Maddox²⁰⁴ reported the occurrence of paroxysmal tachycardia in an adult female which lasted 69 days; the seizure was sudden in onset but gradual in decline and the electrocardiogram was typical of paroxysmal auricular tachycardia. Taran and Jennings²⁰⁵ cited an unusual case of paroxysmal nodal tachycardia in a seven day old infant on whom vagal stimulation or the administration had no effect but digitalis relieved the paroxysm. Schott²⁰⁶ observed five cases of dissociation with interference of the heart, a condition in which a faster A-V rhythm and a slower S-A rhythm co-exist and in which the slower S-A rhythm at times interferes by conducted beats with the faster A-V rhythm, but this can only be recognized by electrocardiographic methods.

Auricular Fibrillation and Flutter: Brill²⁰⁷ reported a case of a 43 year old female with evidence to prove that auricular fibrillation in an otherwise normal heart may of itself cause congestive heart failure; he concluded that it is important to establish in patients with fibrillation the presence or absence of organic heart disease, and of bearing in mind that congestive failure of even a severe degree may develop in either instance and must not be regarded of itself as necessarily indicative of organic or structural change. Flaxman²⁰⁸ found auricular fibrillation to be the most common form of arrhythmia in hypertensive heart disease as it occurred in 158 (25.3%) of 623 patients with this disease; it definitely influenced the course of the disease in 44 (27.8%) in whom the rapid irregularity preceded and precipitated the congestive heart failure and led to an early death from this cause within one month after the onset in 8 (18.1%) of the 44 patients; when the auricular fibrillation occurred after congestive heart failure had been present from one month to several years, it had no apparent influence on the course of the disease except in relation to the cause of death and the comparative absence of additional occurrences common to appear in hypertensive patients. Sprague²⁰⁹ reported the case of a 36 year old male who had repeated attacks of palpitation lasting from one to five minutes with sweating; the heart size was normal but rapid auricular fibrillation was present and electrocardiography showed also a bundle-branch block; the patient was given 1½ grains of digitalis over four days and his heart became regular, and

afterwards no cardiac pathology could be demonstrated by physical examination, roentgen study, or laboratory tests. Lewis²¹⁰ reported the case of a clergyman who was first seen at the age of 53 years with a tachycardia of three years duration, and which the author reported as a case of auricular flutter in 1912, (Heart, 4:179, Case 3); the auricles seemed to have fluttered without cessation for 24 (if not 27) years, and although the ventricles during the greater part of this time had been driven at very excessive rates, the efficiency of the heart had not been impaired by the increased energy expenditure. Formijne and Zuidema²¹¹ observed nine cases of pulmonary carcinoma, all of whom had arrhythmias of the paroxysmal type; four had fibrillation, one had flutter, and in the rest the exact type could not be determined; they concluded that the paroxysmal development of fibrillation and flutter may be regarded as characteristic of pulmonary tumors as in most cases the necropsy revealed that the pulmonary neoplasm had invaded the pericardium or the musculature of the auricles.

Cardiac Neuroses: Wittkower²¹² analyzed the psychological factor in cardiac pain in 73 such patients and irrespective of the underlying cardiac disorder, 48 of these were found to be psychoneurotics; further psychological exploration revealed that in the majority of patients, cardiac pain seemed to be a manifestation of conversion hysteria. White and Glendy²¹³ presented striking examples of cardiac neurosis, the first patient of which has as a basis a hypersensitive nervous system, a history of heart disease in the family, access to medical literature, increased nervous tension in his work, and a hasty incorrect diagnosis of angina pectoris; the second patient was a young woman whose first heart attack, apparently consisting of paroxysmal tachycardia with precordial distress, followed the death of her only child, and was unfortunately treated with morphine so that during the next 15 years she became a morphine addict and never showed any evidence of heart disease. Wortis²¹⁴ found that cardiac psychosis is mainly characterized by confusion, anxiety and delusions of persecution, and the patients become overtalkative and circumstantial; the development of psychosis in the course of heart failure, as compared with the neuroses, appears to be of grave prognostic significance, for of 19 patients who could be traced, 16 had died during or within

two years after the period of observation. Whishaw²¹⁵ stated that 10% of all patients exhibiting cardiac symptoms or signs in private practice had anxiety as the exciting factor, as 16 females and 14 males of average age 35 years had domestic troubles, surgical operations or illnesses, or accidents, which brought on the neuroses.

Heart-Block: Borg and Johnson²¹⁶ reported a case of recurrent ventricular standstill in a 26 year old male with complete heart-block, in whom the mechanism of the attacks resembled that of transient ventricular fibrillation; the clinical manifestations consisted only of cardiac syncope but the electrocardiograph made possible the correct diagnosis. Eidlow²¹⁷ noted transient bundle-branch block of the common type which occurred several times subsequent to coronary thrombosis in a 59 year old male before this disturbance in conduction became permanently established; these changes in the type of intraventricular conduction were not accompanied by any subjective symptoms. Comeau²¹⁸ reported the case of a 78 year old female with Adams-Stokes' syndrome who, by electrocardiographic evidence, had a complete heart-block alternating with normal rhythm and conduction; she ultimately developed a chronic complete heart-block with the spontaneous disappearance of syncopal attacks. Olav-Kerr²¹⁹ stated that coronary thrombosis has to be included among the causes of chronic heart-block seen either on account of bradycardia or clinical symptoms with or without Adams-Stokes attacks.

7. SPECIAL TREATMENT

O'Shaughnessy²²⁰ re-opened the subject of surgical treatment of cardiac ischemia by cardiocomentopexy and established that the operation can be performed without immediate disturbance even in a type of patient ill-suited to most surgical procedures; there has been no postoperative shock and the only immediate death was due to a cause unrelated to the cardiovascular system; the graft fulfills the immediate function of supplementing the blood supply to that portion of the myocardium still capable of activity. In answer to this type of surgical treatment for cardiac ischemia Cassidy²²¹ stated that before the flood descends upon us (omentopexy operations for angina pectoris) and perhaps carries away hastily improvised barriers of clinical ex-

perience and judgment, elementary observations and considerations for these patients should not be forgotten in these days of elaborate investigations and treatment. Beck²²² reported that he carried out the operation of grafting a new blood supply to the heart on 16 patients with coronary disease and to October, 1936, the mortality was 50%; by December 30, 1936, twenty such patients were operated upon and the last five, all extremely bad risks, went through the operation without a death. Feil and Beck²²³ reported that in the last 13 patients operated upon the mortality was 15.4%, and the last nine consecutive patients went through the operation without a mortality.

Claiborne and Hurxthal²²⁴ stated that in following the patients with angina pectoris after a total thyroidectomy, it has been obvious that the amelioration of pain is more or less a temporary affair. Froment and Jeune²²⁵ stated that total thyroidectomy, by lowering the metabolism, by diminishing the organic needs, and the cardiac output, may improve the painful crises but by inducing increased cholesterolemia, favors the process of coronary disintegration. Weinstein and Hoff²²⁶ found that the immediate relief of pain in patients with angina pectoris and congestive failure observed after total thyroidectomy was due to injury to the superior and middle cardiac nerves and nerve plexuses on the posterior surface of the thyroid gland and its vessels.

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THE SYMPTOMS. DIAGNOSIS AND TREATMENT OF UNDULANT FEVER

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It was in 1861 that Marston,¹ a medical officer in the British Army, described "Mediterranean or Gastric Remittent Fever." "By this is meant a fever characterized by the following symptoms and course: a preliminary stage of subacute dyspepsia, anorexia, nausea, headache, feeling of weakness, lassitude and inaptitude for exertion, mental or physical, chills, muscular pains: lastly, a fever having a very long course—three to five or ten weeks—marked by irregular exacerbations and remissions, great derangement of the assimilative organs, tenderness in the epigastric region, splenic enlargement, slight jaundice without any exanthem. Neither bron-

chitis nor diarrhea as a rule. The patient is prone to relapses and the disorder is followed by a protracted convalescence and a chloro-anemic aspect. . . There is no fever so irregular as this in its course and symptoms."

This old description is an excellent summary of the disease as we see it today. There is usually a mild indisposition with anorexia and headache; sweating is often marked. The general condition of the patient remains good in spite of the high temperature and the profuse sweats. The pulse rate is slow in proportion to the rise of temperature. In some cases the patients continue at work, being annoyed only by a sense of fatigue at the time of day when the fever is highest. The characteristic feature of the clinical course is that which gives the name, Undulant Fever, to the disease—the long duration of the disease with alternating exacerbations of fever, often high, and periods of remission during which no fever is present or only a slight rise occurs occasionally. These periods of fever alternating with afebrile or subfebrile periods may persist for months, even a year or more.

To these symptoms may be added anemia, loss of weight, strength and morale which are especially associated with the type of the disease characterized by severe acute arthritis. Enlargement of the spleen is almost always present; its absence raises a question as to the accuracy of the diagnosis. The leucocyte count is characteristically low, with a relative lymphocytosis. Loeffler² reported that in the course of the disease in 24 cases the leucocyte count was over 10,000 only five times; in 15 cases the count was under 4,000. There was one count of 1,400. A diminution of the total number of leucocytes quite regularly corresponded to a rise of temperature. Lymphatic glands are frequently enlarged. The liver may be enlarged, sometimes tender. There may be transitory erythematous or roseolar eruptions, even varicella-like eruptions and bullous dermatitis. The outstanding features are the characteristic fever curve, with remissions and marked exacerbations, the sweats, enlargement of the spleen and lymphatic glands, leucopenia with relative lymphocytosis, a pulse rate slow in relation to the height of fever, and the generally well-maintained physical condition in spite of these symptoms.

Furthermore (and this is an important feature) undulant fever often produces various

local types of disease. Chronic arthritis of a single joint or of several joints may occur; spondylitis has been reported frequently, hydrops of a single joint is an occasional finding. Chronic subcutaneous abscesses, cholecystitis, encephalitis, meningomyelitis, neuritis, adenitis, mastitis, thrombophlebitis, pleurisy with effusion and endocarditis have all been reported. Orchitis and epididymitis occur, not so often as an isolated or presenting symptom, but as a part of the general infection. Kulowski³ reports five cases of osseous and joint lesions, one having been observed for nearly six years before the causative organism was suspected and recovered from the lesion. Froik⁴ reported 15 patients suspected of pulmonary tuberculosis who were found to have undulant fever. Cases of meningitis have been reported. DeJong⁵ has reviewed this subject, adding a case of his own in which the organism was cultured from the spinal fluid. Various authors, especially in Europe, report a hepatolienal syndrome, a splenic anemia with enlargement of the liver, which they attribute to undulant fever. R. M. Johnson⁶ reported "three cases of undulant fever, each regarded as pneumonia when first seen." There was "a period of several weeks of mild illness before the onset of pneumonic symptoms. . . The pulmonary lesions in each were atypical."

Primarily, the diagnosis is based upon the clinical findings. Often the symptoms are first attributed to typhoid, tuberculosis or sepsis of undetermined origin. Too often our failure to make the diagnosis of undulant fever is due to our disregard of its possible presence. Subsidence of the symptoms without demonstration of their cause leaves the question unanswered until a recrudescence suggests the possibility of undulant fever. The place of residence of the patient may suggest the correct line of approach to the diagnosis; this is especially true if it is known that raw milk has been used or that the patient has been in contact with animals or meat products which may carry infection.

A few years ago we cared for a patient whose initial symptoms were such as have just been described. Typhoid could not be demonstrated, but the information that he was fond of cottage cheese and that he had recently spent some weeks in a locality known, at that time, as a focus of undulant fever, led to the demonstration of adequate proof within a short time.

The important laboratory procedures employed

for diagnosis include, in addition to the white cell counts, the culture of the organism from the blood, urine, spinal fluid, dermal eruptions or the pus of localized abscesses, the demonstration of agglutinins for the infecting organism in the blood of the patient, the demonstration of an allergic reaction, the skin test, and the opsonocytophagic test.

"Recognition of the causative organisms by means of blood culture is of great aid to the public health officer, but even in the most favorable cases this requires from eight to ten days, at times even longer. Nevertheless, it should be employed as a routine measure at the onset of the disease. Blood culture is positive in about ten per cent. of the cases actually regarded as undulant fever."⁷ This procedure is difficult, slow in development and technically exacting because of the need for carbon-dioxide, especially in demonstrating the Bang or abortus strain of the organism. Huddleson, Johnson and Bates⁸ report successful cultures from 16 of 85 patients. Poppe⁹ states that "The bacteriological proof of the Brucella organism through culture or guinea pig inoculation establishes the diagnosis. The cultivation of the Brucella organism from the blood, urine and exudates offers some difficulty and is only successful in a minority of the cases, and by the use of special cultural procedures."

There is an extensive literature concerning the agglutination and the inoculation tests. Huddleson, Johnson and Bates¹⁰ state that "the presence of specific agglutinins in the blood may furnish confirmatory evidence, but cannot be relied upon, since the blood of many individuals shows Brucella agglutinins, sometimes in high titer, and a negative test does not always exclude this infection." Wichels and Gara¹¹ are of the opinion that "The positive agglutination test only says that man or animal has once been in contact with bacilli; whether they suffer from a Bang infection or have gone through a course of the disease recently or at some time previously is not determined by this method." According to Carpenter and Boak,¹² "Another difficulty is the validity of a diagnosis which rests only upon the presence of a febrile syndrome and Brucella agglutinins. Such evidence does not constitute a reliable diagnosis because the agglutinins may have been the result of a previous sub-clinical infection. In fact, this is not uncommon, especially in rural districts." Lotze and Wichels¹³ report that among 1,000 persons, 18 per cent.

showed a positive agglutination of 1:100. Hunt and Nolle¹⁴ studied the blood from 1,000 persons admitted as patients or blood donors without selection; 89, or 8.9 per cent. gave a significant positive agglutinin test.

According to Straube,¹⁵ "A single antigen inoculation undertaken for diagnostic purposes can produce a skin allergy and can provoke agglutination and complement fixation in persons otherwise serologically negative and, indeed, in values which are so high as to be regarded as decisive in the diagnosis of Bang's disease." Binder and Fauszt¹⁶ report seven positive agglutinations (1:100 and higher dilutions) among 22 men who had worked for longer or shorter periods with infected animals. None of this group gave a history of the clinical course of undulant fever.

The intracutaneous test is probably the test most frequently used at the present. Lerche and Roth¹⁷ "found among 44 people, veterinarians and laboratory workers, who might have had contact with Bang's bacillus, but were apparently healthy, 41 positive skin reactions; eight of these reactions were mild. The entire group had been negative to the agglutination test. Four of the patients gave a history suggestive of Bang's disease. A control group with no demonstrable contact with abortus showed negative reactions in all. The intracutaneous test is of no value in persons who have often had opportunity for skin contact with Bang bacteria." The authors further conclude that the intracutaneous test in Bang's disease is more sensitive than the serologic reaction and that even the most marked positive cutaneous reaction cannot be accepted alone for the diagnosis of Bang's disease, at least in persons who have frequently been exposed to infection. The skin test is not an indifferent procedure: we have seen reactions of severity which occasioned the patient much discomfort, associated with fever, and sluggish healing. The test may be accepted as of value in those cases in which the agglutination reaction is doubtfully positive. . . . Angle¹⁸ recommends the injection of from 0.02 to 0.04 c.c. of Brucella antigen intradermally, and adds that "Any vaccine on the market is a suitable antigen for the performance of this allergic reaction." Hantsehmann¹⁹ describes the reaction thus: "It begins with a wheal, marked swelling about this, later moderate nodular development, and finally central necrosis." It has been observed that ab-

secess formation may follow vaccination. A case of this type was described by Scoville,²⁰ who reported such a reaction in a patient with mild ambulatory Brucella infection. In an endeavor to avoid severe phenomena, bacterial filtrates have been employed for the skin test, but the results are not satisfactory. In particularly sensitive people a systemic reaction may occur following the injection of the skin test antigen. . . "This may be a cutaneous hypersensitiveness without symptoms of illness as the result of previous subclinical (asymptomatic) Brucella infection." In our own experience some marked reactions have been seen; the skin test should not be undertaken lightly; minimal doses only should be used for diagnosis. It may be added that this test is the least helpful, from the standpoint of practical value in diagnosis.

Huddleson and Johnson²¹ state that "Recovered cases will show a positive skin test and the cells in the whole blood have marked phagocytic power for Brucella. The infected individual will also show a positive skin reaction, but the cells in the whole blood show no (or low) phagocytic power. The susceptible individual shows a negative skin reaction and the cells show little or no phagocytic power."

This statement refers to the fourth method of diagnosis—the opsonocytophagic test of Huddleson, based upon the Leishmann-Veitch procedure developed some thirty years ago. For the detailed method, Huddleson's work should be consulted. Theoretically, the test is acceptable; practically, its value depends largely upon the skill and patience of the technician. The most recent report from Huddleson²² and his associates includes a description of an intradermal test with Brucellergin. This is "a suspensoid of nucleoprotein (1-2000) isolated from Brucella cells. The test is performed by injecting 0.1 c.c. of the Brucellergin intradermally on the forearm and is read after 48 hours." He states that "The Brucellergin test is the most sensitive test in the diagnosis of brucellosis. If the test is negative, brucellosis will usually be ruled out. If the test is positive, the opsonic test should then be performed to determine whether infection or immunity is present."

It is obvious that the laboratory diagnosis of undulant fever rests upon uncertain criteria. "shifting sands," which afford presumptive evidence, the value of which depends upon the associated clinical findings and the diagnostic ac-

men of the physician. Much progress has been made in recent years, but the diagnosis of undulant fever is still puzzling; the various laboratory procedures may lead one on a false scent. In making a diagnosis of undulant fever, consideration should be given to such items of information as the residence and occupation of the patient, the source and the degree of protection of his milk supply, possible exposure to infected meat, through handling or insufficient cooking, the clinical course of the illness, and the demonstration of one or more of the special tests described. Furthermore, care must be taken to exclude those diseases which demand differential diagnosis.

Alice Evans²³ refers to Shaw's work of 1906, whom she designates as "the first to recognize the so-called ambulant form of the disease, in which symptoms may be entirely absent or limited to a few days of slight fever." Shaw found a positive agglutination test in 15 per cent. of 525 Maltese dockyard employees. "Cultures were obtained from ten, all of whom were working full time. Examination revealed, however, there was a slight rise of temperature in some of them." She refers to the paper of Hardy, Jordan and Borts, who "reported that an average of 25 per cent. of the cases they studied in Iowa were ambulant," and lays emphasis upon the fact that "The text-book definition of neurasthenia describes chronic brucellosis, exhaustion, insomnia, irritability and complaints of aches and pains for which no objective signs can be found," and insists that the possibility of chronic brucellosis should be considered in the study of patients supposed to have neurasthenia.

Campbell and Greenfield²⁴ in South Africa report a study of 661 patients with pyrexia of uncertain origin; 4.84 per cent. gave positive serum reactions to Brucella up to a titer of 1:400, and 9.3 per cent. to 1:100. The authors believe that the first group was made up of "certain" cases of Brucellosis and the second of "almost certain" cases.

The prognosis is good so far as ultimate recovery is concerned. The death rate is usually estimated at about two per cent. The prognosis as to duration cannot be definitely stated.

Wendt²⁵ regarded vaccination as the most promising method of treatment and gave increasing doses of killed bacteria every two days, slowly increasing the dose from 10 to 100 million. Yet he concludes that chemotherapy, vac-

cination and the use of serum showed no uniform results and the therapeutic effect of all the medicaments used are yet much in dispute. Kretzler²⁶ reported a case of prompt recovery after the administration of convalescent serum. Quevli and Nelsen²⁷ described favorable results following the use of whole unaltered blood transfusions in the treatment of undulant fever. In this work only such blood was used as showed a high opsonocytophagic index. So far as was known, the donors had never had undulant fever. Stage²⁸ found better results with typhoid vaccine than with Malta fever serum in 35 cases of undulant fever. O'Neill²⁹ treated five cases with detoxified *Alcaligenes abortus* vaccine: in every instance clinical improvement exactly paralleled desensitization to the bacterial protein. No remissions occurred within a maximum of two years after the infection.

Vreeland³⁰ is of the opinion that "vaccines and serums have had little success in the treatment of the disease. Mercurochrome is dangerous and neosalvarsan of doubtful value. Neither of these chemicals has been demonstrated as useful; there is no indication for their use upon the basis of our present knowledge." Poston and Smith³¹ state that "Brucella meningitis can be treated by human immune serum obtained from persons who have been actively immunized to Brucella, or possibly from convalescent patients." C. E. Erwin³² reports a case of meningoencephalitis treated successfully by the intravenous use of typhoid vaccine. DeJong³³ reviewed, in connection with his own case already mentioned, eight cases of Brucella meningitis; six recovered, three after the use of vaccines and one after the use of toxic filtrate, and two without specific treatment; one patient died and another developed a permanent transverse myelitis. In the author's own case, "Some improvement followed the use of palliative measures and antiserum."

Ervin, Hunt and Miles³⁴ report satisfactory results in 10 cases of undulant fever treated by the intravenous administration of typhoid vaccine. Angle³⁵ used a vaccine of equal parts of the abortus and porcine strains and believes that "vaccine therapy offers the best available method of treatment of both acute and chronic brucellosis." He prefers the intramuscular route of injection and thinks that not more than seven injections should be given: the injection is given every second or third day. He reports one

successful intravenous injection which was associated with so severe a reaction that he has never used intravenous injection since.

Huddleson and Johnson³⁶ have used a liver broth filtrate of the Brucella organism for intramuscular injection. This preparation is known as Brucellin; 0.05 to 0.1 c.c. of Brucellin should first be used to determine the sensitiveness of the patient to this material. If no marked systemic reaction is elicited within 48 hours after the intradermal injection, one may give 1 c.c. intramuscularly. This dose should be repeated at intervals of three days until four injections are given. These intramuscular injections usually cause a local reaction and a rise of temperature from 104° to 105°. The symptoms are likely to increase for 24 hours. If the systemic reaction from the intradermal injection is quite severe, it is advisable to start the intramuscular injections with 0.1 to 0.2 c.c. If this dose is not followed by a severe systemic reaction, the next dose at the end of three days may be doubled. Each dose thereafter may be doubled, provided the systemic reaction is not severe, until 1 c.c. is reached. Three successive 1 c.c. injections may be given. "If the recommended number of doses of 'Brucellin' can be given, complete recovery can, as a rule, be obtained within twelve to fifteen days in those cases in which the symptoms are of only one day duration or up to three months' duration." The authors believe that "Brucellin" may be used without dangerous consequences if the precaution is taken to determine the sensitiveness of the patient before administering it intramuscularly. "Brucellin" should *never* be injected into an individual who has recovered from the disease because of the severity of the systemic reaction which follows."

In a recent communication Huddleson, Johnson and Bates³⁷ report the results of the treatment of 100 cases. "If one excludes the six cases that failed to respond to treatment and the two that succumbed, it will be found that the average duration of illness per case before treatment was 159.3 days. The average duration of illness per case after treatment was begun was 18.3 days."

Foshay³⁸ and his associates used detoxified bacterial antigens in the preparation of an antiserum for the treatment of brucellosis. "The antisera for these initial therapeutic trials were produced from goats after subcutaneous inoculations with chemically treated suspensions of

Brucellae." They reported 20 cases in 1935 in whom the fever disappeared upon an average of nine days following the treatment. These patients were asymptomatic in from seven days to six weeks, able to resume customary occupations in from eight days to two months, and have remained well for observation periods of from four to twenty-nine months. The total dosage of the serum varied from 20 to 65 c.c. given in divided doses over a period of three days. The initial dose was 15 or 20 c.c. The serum has been given most often intravenously, but also intramuscularly and subcutaneously. Bannick and Magath³⁹ report two cases in which recovery followed the use of Foshay's antibrucellosis serum. Bannick described a case which had been relieved by the goat serum and Magath related a dramatic recovery by the use of Foshay's horse serum. Foshay's recent work has been based upon the use of horse serum; the results are encouraging.

Prickman and Popp⁴⁰ reported three cases treated by hyperpyrexia with prompt disappearance of the symptoms; three of these were known to have been ill for three months or more.

Wainwright⁴¹ reported seven cases treated with neoarsphenamin. "Six showed prompt subsidence of the infection, whereas one in which the diagnosis was not certain was little affected."

The discussion of the therapy of Brucellosis may be concluded with the conservative expression of Poppe.⁴¹ "A decision as to the value of any method of treatment in Brucellosis is not easy because the periods of fever occur irregularly and febrile periods alternate with long afebrile pauses. It is further to be considered that the symptoms may disappear without special treatment. It must further remain in doubt as to whether or not the manifest form will pass into a latent asymptomatic one."

SUMMARY

1. The clinical aspects of undulant fever are sufficiently characteristic to suggest the diagnosis if the possibility of this disease is kept in mind.
2. Careful observation and evaluation of the course of the disease, with especial attention to the long-established presenting features of the disease, the fever, the leucopenia with lymphocytosis, the enlarged spleen and lymph glands, the sweats, the disproportionate well-being of the patient and relapses are most important in the diagnosis; a history of possible exposure is an aid to diagnosis; the various laboratory pro-

cedures, of which the demonstration of a positive culture from the blood is most significant, are of value. The laboratory procedures, however, are not infallible, and unless based upon satisfactory clinical evidence may mislead, with the exception of a positive blood culture, which may be accepted as diagnostic.

3. The disease may manifest itself in unusual forms; predominant symptoms of such diseases as meningitis, encephalitis, pneumonia or hepatitis may mislead.

4. Localized infections in joints or bones, superficial or deep abscesses, empyema or localized intra-abdominal infections must be kept in mind.

5. Treatment is still a subject of study: at present no specific remedy or scheme of treatment has been established.

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IMPORTANCE OF THE ELECTRO-CARDIOGRAM

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All physicians, general practitioners and specialists are interested in knowing the condition of their patients' hearts. They understand that to obtain that knowledge the patient must have the benefit of both physical and laboratory examinations. In addition to the chemical, microscopical, and, when indicated, bacteriological tests, an electrocardiogram and an x-ray film are indispensable if there is real or supposed heart pathology.

Experience has proved that neither general practitioners nor specialists are interested in the theory of the electrocardiogram. There is no compelling reason for them to be interested in a purely laboratory procedure performed to confirm or to establish certain important facts. The physiologist has a compelling reason to be interested in the theory of the electrocardiogram; it is part of his job. The interest of the practitioner and the specialist is limited to knowing whether the information published by the physiologist is a fact or an opinion.

Einthoven, the great Dutch physiologist, demonstrated the possibility of recording on a moving picture film the electric currents developed by the beating heart of the living, conscious human being. That feat accomplished, he proved that the state of the fibres and the force of the contracting tissues were synchronous and synonymous with the inscriptions of the electrocardiogram.

At the request of Einthoven, Sir Thomas Lewis verified and extended Einthoven's experiments on dogs and made a large number of tracings of supposedly normal individuals and of those suffering from heart disease. Some of the tracings made of dogs were later found not to be true when compared with those of man. Since Lewis wrote his classical book, "The Mechanism and Graphic Registration of the Heart Beat," many clinicians have made numberless tracings, confirmed the studies of Lewis, compared them with x-ray and autopsy findings, and established the authenticity of the electrocardiogram.

In an appraisal of the condition of the heart,

Read at a meeting of the Northwest Branch of the Chicago Medical Society, February 18, 1938.

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CURE FOR INFANT DISEASE FOUND

Bloomington, (Ind.) Feb. 19.—(AP)—In seaweed and the peels of lemon, orange, and grapefruit, the University of Indiana School of Medicine has discovered a new remedy for cholera infantum.

The medicine is a mixture of agar-agar and pectin. The agar comes from Japanese seaweed; pectin from the peels.

The two promise the virtual finish of cholera infantum, once dread infant killer, curbed in recent years by better diets, but still taking lives in July, August, and September under the newer name, "diarrhea of infants."—*Los Angeles Times*, February 20, 1938.

the electrocardiogram presents accurate visual evidence of both normal and abnormal states of the myocardium. The electrocardiogram notes changes acute in character, that are the beginning of progressive changes that may be favorably influenced by intelligent medical care continued over a long period of time. The electrocardiogram portrays moderate, advanced and terminal states of myocardial degeneration with remarkable exactness.

There was a time when a meager and poorly written history; a partial and indifferent physical examination; urine examination, and a blood examination were considered sufficient for the diagnosis and treatment of heart disease. Now, the history must be in meticulous detail and the physical examination must include a studied, careful examination of all parts of the body. The urine and blood examinations are as important as ever. In addition, there must be an electrocardiogram; in some cases, a series of electrocardiograms, a fluoroscopic observation and an x-ray picture of the chest, taken at a target distance of four to six feet, before a correct diagnosis can be made and the most effective treatment instituted.

When the electrocardiogram first appeared as an added diagnostic aid, it was viewed by practicing physicians with a good deal of skepticism. It was considered an intricate puzzle, difficult to interpret, and of value only to those physicians who had a knowledge of higher mathematics sufficient to understand the theory of what appeared on superficial examination to be an extremely complicated graph. Knowledge of the physics of light is necessary to the proper making of an x-ray film that will depict correctly existent conditions. The technique resulting from that knowledge, once established, becomes the guide to technicians for the making of subsequent pictures. Correct interpretation of a properly made x-ray film is entirely independent of the knowledge that led to the correct making of the film.

Now that experience in the making of a large number of electrocardiograms has shown that the various conditions found in a study of the normal and abnormal heart consistently present the same electrocardiographic pictures, it is possible for all physicians to acquaint themselves with what the electrocardiogram shows and to dismiss from their minds the belief that knowledge of

the theory of the electrocardiogram is necessary to the making of a correct diagnosis.

The value of the electrocardiogram is both positive and negative. If there is pathology in the heart muscle the electrocardiogram offers positive evidence of its presence. The negative value is evident when the patient presents symptoms pointing to the heart as the diseased organ but the electrocardiogram shows the heart is not at fault. In these cases the electrocardiogram will offer visual proof either of the integrity of the heart or of functional disturbance due to pathology in some other part of the body.

Let us further examine briefly the negative value of the electrocardiogram. Patients frequently present symptoms that may be very confusing and make it difficult for the physician to determine whether or not he is dealing primarily with disease of the heart or with some condition that is affecting the normal function of the heart. A frequent example is an aortitis that will be revealed by the x-ray. Cholecystitis and colitis may give rise to symptoms that lead to the conclusion that the heart is primarily the cause of the illness from which the patient suffers. The effect of gall bladder disturbance may be reflected in the electrocardiogram, but a return to the normal, clinically, and as shown in subsequent electrocardiograms, will be noted if the disturbance in the gall bladder and colon is promptly corrected and if too much damage has not been inflicted on the heart. The fibroid uterus and the damaged prostate will in time exact their toll from the heart and the amount of damage can be determined by the electrocardiogram.

One object of this paper is to show the value of a chart upon which are carefully recorded the direction of excursions, the exact measurements in time and in distance of the various complexes, and other departures from the tracings of a normal heart.

Some ten years ago I devised the predecessor of chart shown in Figure I, and have used it in the interpretation of all electrocardiographic records. By its use early changes are detected and the mistakes of pronouncing as normal, records showing minor changes in the myocardium are avoided. It is in the early disturbance of the economy of the heart that these carefully made and recorded measurements prove themselves to be of the greatest value. It must be

kept in mind that acute illnesses may modify the direction, the duration, and the height of the excursions, which may again become normal when the effects of the acute illness have been repaired.

The information presented by the electrocardiographic record is based, first, upon the direction and height or depth of the excursions above or below the horizontal base line; second, upon the width or duration of the excursions measured along the base line and counted in fractions of a second and, third, upon any distortion of the excursions in the manner of notching. To facilitate the obtaining of these measures of distance and time, all electrocardiographic records are provided with horizontal lines accurately spaced for measurement of distance and perpendicular lines accurately spaced for measurement of time. These measurements are respectively in millimeters and in fractions of a second.

Beginning degenerative changes in the heart muscle do not lend themselves to discovery by careless and superficially made examinations of the electrocardiographic record. The record must be carefully inspected, preferably with the

aid of a magnifying glass. Only exact measurements and the appreciation of slight departures from the normal range will result in a correct reading. The accurate measurement and recording of the figures on a suitably designed chart is necessary to the proper interpretation of an electrocardiographic record in all cases except those in which the departure from the normal is so extensive and spectacular that a superficial observation is all that is required to establish the major diagnosis. Fibrillation, flutter and bundle branch block are examples of this type of record and do not require accurate measurements to establish the diagnosis, but even in these cases, recording the height and the direction of QRS and T will materially aid in determining the prognosis and the resistance of the

The information relative to the age, sex and habitus of the patient is of value to the reader of the electrocardiogram who seldom sees the patient. The information relative to the pulse, respiration, temperature and blood pressure is of value both to the physician attending the patient and to the physician who interprets the graph.

At the bottom of the chart is space for rate, diagnosis, remarks and printed information of normal measurements.

ELECTROCARDIOGRAPHIC MEASUREMENTS

CASE NO.	DATE	STANDARDIZATION					
PATIENT	AGE	REFERRED BY					
Pulse	Resp.	Temp.	B.P.	Tall	Short	Thin	Stout
LEAD I							
P Wave		QRS Complex			T Wave		
Height		Height			Height		
Notching		Notching			Notching		
Duration		Duration			Duration		
PR PQ Interval		RT QT Interval			Inversion		
		Type of ST					
LEAD II							
P Wave		QRS Complex			T Wave		
Height		Height			Height		
Notching		Notching			Notching		
Duration		Duration			Duration		
PR PQ Interval		RT QT Interval			Inversion		
		Type of ST					
LEAD III							
P Wave		QRS Complex			T Wave		
Height		Height			Height		
Notching		Notching			Notching		
Duration		Duration			Duration		
PR RQ Interval		RT QT Interval			Inversion		
		Type of ST					
RATE:		DIAGNOSIS:					
REMARKS:							

NOTE: Digitalis and other drugs will produce similar changes in T as those produced by coronary thrombosis.

NORMAL MEASUREMENTS

P Wave		QRS Complex		T Wave	
Height	1 to 2 mm.	Height	5 to 16 mm.	Height	1 to 4 mm.
Notching	None or slight	Notching	None	Notching	None
Duration	0.04 to 0.08 sec.	Duration	0.04 to 0.12 sec.	Duration	0.12 to 0.16 sec.
PR Interval	0.12 sec.	RT Interval	0.30 to 0.40 sec.	Inversion	In Lead III only

heart muscle to the assault from which it has suffered.

The time is fast approaching when all physicians will appreciate the necessity of having electrocardiograms and x-ray pictures of the chest of all patients who attain the age of forty. When this is done, sudden and fatal accidents due to coronary occlusion may often be prevented, because the attending physician will be forewarned by the danger signals shown in the electrocardiogram and x-ray film that indicate future untimely disaster.

The demand by physicians for electrocardiograms of all patients is increasing and has extended the usefulness of this very necessary laboratory procedure beyond the field of those who devote their time almost exclusively to the diagnosis and treatment of heart disease. It is significant to note that those physicians who have had the greatest amount of experience in clinical study of heart disease are most insistent upon confirming their findings and deductions with what is shown by the electrocardiogram and the x-ray film of the chest. New books dealing with the subject of electrocardiography are being written, which contains many observations and conclusions that should prove both interesting and instructive to all physicians.

2800 Milwaukee Avenue.

THE CAMEL AND THE DOCTOR

L. C. IVES, M. D.

PEORIA, ILL.

Gentlemen: Let us waste no time in idle conjecturing as to the identity of this camel—it is a hybrid—a cross between state medicine, alias federal medicine, alias socialized medicine and political commercialism.

No longer are the shoulders of this camel pushing aside the tent flaps; no longer do this camel's hips strain at the tent pegs; nor is the tail flagrantly flipping in the interior of the tent of medicine.

Do you disbelieve? Arouse yourselves and behold.

Have you forgotten Federal relief manipulation? Who decided that a person was ill? Who decided the necessity (or otherwise) for hospitalization and who decided the attending physi-

cian's compensation—if any? Who was the only one, qualified to have judgment in these matters? Was he, the man of medicine, called upon? Oh no! The salaried non-medical investigator, cemented to his or her job by the precinct boss, did these things and at a commercial gain that was divided, many times, with the political bigwigs. And State relief! How many times has the medical profession wondered to whom that word relief applied—the sick or the administrative job holder. True, this so-called relief program gave opportunity for opening the flood gates of wild rampant brain storms among the medical irresponsibilities, held in check by organized medicine prior to invasion of our provinces by self aggrandizing lay persons.

Perhaps this is the time for members of organized medicine to take to task those leaders, elected or self appointed, who have betrayed medicine by their falterings and pusillanimity. It is high time for red blooded, clear brained Doctors of Medicine to take control of organized medicine and remove the torch from the vacillating hands of those who have attempted to lead us away from the centuries old standards of medicine.

However, let's not liken our actions to the self-appointed four hundred thirty of the Committee of Physicians who have, so recently, crowded themselves into the limelight, flapping their mercolized wings with infantile glee and enthusiasm.

One wonders if the organizers of this committee did not take a page from "Fifty Years of Medicine and Surgery"—an autobiographical sketch by Dr. Franklin H. Martin—paying particular attention to the subtle maneuvers and parliamentary tactics employed in the organization of the American College of Surgeons. Well—perhaps they, too, will be comfortably ensconced in beautiful stone buildings and be allured to wear gorgeous caps and gowns trimmed in red.

Milton C. Winternitz, M. D., secretary of this committee in an especially prepared release for Associated Press writes:

"The general unrest in recent-day medicine shows that neither the physician nor the patient is satisfied.

"To me, this unrest is demonstrated in three fundamental problems:

1. How can we give the individual the benefit of the amassed knowledge of today?"——

What a childish question! The answer is centuries old. The individual has always received the benefits of all available knowledge from the true Doctor of Medicine—who has separated the chaff from the wheat, the theoretical from the practical and applied the benefits to the sufferer. In no case has the sick or injured individual benefited from the crowded clinics. Why? Because every individual is a biological law unto himself. Nine thousand nine hundred and ninety-nine consecutive fractures or pneumonias make no accurate symptom complex for the ten thousandth fracture or pneumonia.

Sick people are not Ford automobiles.

This is an every day truism to the real physician; and, incidentally, very few physicians who appreciate this truism find time for secretaryships for such organizations.

The secretary's second problem: "How is the individual, in the complex medical practice of today, going to decide what he is to do when he is ill? Where is he going to find the right doctor?"

Again we pity the poor secretary and his conferees. Does he not know that were he to take himself away from his tiled halls—away from his systemized clinics; were he to throw himself and his interests—heart and soul—into the never ceasing, ever varying, fight between Life and Death, into the San Michele—he would never fail to find the right doctor.

Let him kneel at the feet of the One Physician and rededicate himself; let him search out the country doctor, ride with him and learn the truth of the beauties of medicine; and he will waste no time writing releases for any press.

His third question and last: "How is the public at large going to meet the expense of modern medicine" is as easily answered.

Modern medicine is not expensive. It is the modern appetite that is costly. It is beyond the amplitude of understanding of self appointed committees to realize that millions of dollars of hospitalization are unnecessary each year? This is jointly due to the American public, propagandized to rush to the hospital on the slightest pretext and to the many of the profession who advise hospitalization when a small amount of serious differential diagnosis would avoid un-

necessary x-rays and hospital beds with resultant expense.

The elimination of unnecessary medicines—having no virtue except the verbosity of the drug representatives—would be a wise economy. A sharp curtailment in the policies of the government in the erection of showy architectural dreams with costly exterior and mediocre interior would result in a sturdier, more self-reliant American race.

A nation whose mechanics disdain the street car to and from work cannot consistently protest the cost of medical care, although encouraged by salary drawing health service employees and designing political leaders.

I wonder, has the profession overlooked the action of the Federal Home Loan Bank Board with its first appropriation, without the consent of Congress, of twenty thousand dollars of the tax payers money for an actual Federal socialized medicine? This allows every other agency of the government the same privilege and also John L. Lewis' contemplated 800,000 C. I. O.'s United Federal Workers of America.

This in spite of Germany's fifty years of State Medicine. In 1930 there were *thirty-six thousand doctors* and *thirty-two thousand bureaucrats* directing the doctors, but in 1936 there were *thirty-two thousand doctors* and *thirty-six thousand bureaucrats* directing the doctors.

Again Germany learned that it cost *four times* as much to doctor thirty-five million state insured as it cost to doctor thirty thousand non-insured.

Our Government's motto seems to be: "If there are any mistakes to be made, the U. S. A. will make bigger and greater ones."

Have you forgotten that a short time ago the plea was, in support of the cause of socialized medicine, that it would be such a boon to the struggling young doctor? I am informed by reliable authority that these poor young doctors—some of them—realized *thirty-nine cents a professional visit* and that the established physician made the next calls for no compensation, in due and customary performance of their daily duties.

Do you remember the open threat of the U. S. Senator from Illinois—he of the pink whisker fame? Have you forgotten for whom he claimed to speak? Do you remember the warning of loss

of professional existence? Your safety and the safety of the profession depends upon your memory.

Is this campaign one of enlightenment? Is this campaign to guide the unfortunate luetic victims to the medical profession for treatment and restoration to health; or is it to make *another* army of non-medical job holders awarded the payroll by the always *grateful* politicians? Remember, gratitude is the lively anticipation of favors to come.

General Pershing is returning from abroad to head the antisiphilitic campaign according to a November issue of "*Life*." General Pershing has won his spurs—but as a military man. Is the medical profession so dumb that we can find no man capable of leading this movement? After all, is there a royal road to medicine?

General Hugh Johnson jumps into the syphilitic campaign—according to the same periodical. Would he refrain *from jumping* were a million candle power spot light present?

Again "*Life*" portrays prominent club women submitting to the drawing of blood for Wassermanns—Club women in the eradication of syphilis!—as much to their element as though they were wet nursing starving tenement babies—and the same amount of benefit. Incidentally the ratio of positive Wassermanns in the club women and the tenement mothers would be interesting.

How many of them—do you think—will sell their all and spend their monies to rescue victims of the primrose path? How many of them will be forced to forego their afternoon cocktails, Monte Carlo, the Riviera because of their brooding over the syphilitic unfortunates writhing in luetic agony?

Health by law—only the disciples of Aesculapius know the full extent the hollow mockery thereof.

I offer a suggestion or a challenge, as it may be.

Let every politician, every publicity seeker, every so-called social worker, take a Wassermann (with or without the presence of the Press) and agree to withdraw from any and all activities if a positive is found:—this glorious country will benefit immeasurably.

Were our governing forces—or those that presume to govern—with knowledge sincere; were

the health of the citizen of real first importance; were the politician (mind you I did not say statesman) thinking in terms of the common man, instead of the hundred of thousands of political henchmen to be rewarded; the remedy would be self evident.

This entire problem would be turned over to the Profession of Medicine together with the monies anticipated and with necessary police powers. In one year's time more would be accomplished towards the eradication of syphilis than will be accomplished in the first hundred years of political maneuvering.

Little did one realize a few years ago that the spirocheta pallida would become the Jacob's ladder for the social, political and professional select.

Are you yet in doubt as to the occupant of the tent of medicine?

We might look at that mysterious organization of interns in New York City, in Chicago, and other cities as yet uncovered.

It seems that another of the ancient traditions of medicine is to be relegated to the horse and buggy days.

WHEREAS; formerly, the neophyte in medicine—having laid his soul and heart on the altar of Aesculapius—gave his every thought (though his entrails cried out in hunger) to his advancement in knowledge of the art of medicine; his one burning desire to perfect himself in the alleviation of human miseries; at this time we find the Interns Council of America demanding through dubonet politicians, one thousand to three thousand and two hundred dollars a year—this with board, room and laundry.

Quoting from *Medical Economics* of November, 1937:

"Behind the pay for intern machinery ever looms the Intern Council—a rather mysterious organization, everything. Its listed officers at 41 E. 42nd Street, Manhattan, are really those of a law firm. The only representative is a Miss Dietz and she is not always there. All requests for information must go through her; yet she insists she can not talk officially. Questions about the personnel, financial backing of the organization are politely but firmly discouraged.

"To reach the officers, you leave a telephone number with Miss Dietz.

"Then sometimes, from somewhere, a voice calls you. Unidentified, it makes an appointment with a member in the part of the city you find most convenient. No information to give over the phone——. One of the group, waxing unduly enthusiastic, answered one of the interviewer's queries with a soap box oration, in which he predicted the day when 'all these abuses will be swept away through the panacea of socialized medicine'—a speech which ended abruptly when another member nudged him."——

The author, Arthur J. Gieger, quotes a statement of Israll Amter, New York State Chairman of the Communist Party: ". . . The Communist Party fully supports the demands of interns in New York City and nationally for the right to full compensation for services rendered; for the end of the system of exploitation which exists now in many hospitals; for the right of the intern for a fair *trade union wage*" (Italics mine).

What a stench our camel has!

Are you still skeptical?

The magazine, *The American*, for November, carries a page (68) "Would You Like Uncle Sam to Be Your Family Doctor?" and fifty per cent. of the quotations are affirmative.

Take cognizance of the fact: that the industrial insurance carriers of this city control the medical lives of approximately eighty per cent. of the workingmen.

Remember that these insurance companies are by their own confessions "in the business of medicine to stay"—and at a profit of dollars and cents.

At least they do not camouflage themselves with hypocritical altruism.

Organized labor is seething at the inadequacy of the personal element in the equation, but as yet underestimates its power.

What would happen did labor force the striking of the words "at his own expense" from Section 8a of the Illinois Industrial Act? At once the injured workman would call the doctor of his confidence and change the entire situation.

No longer the dictated return to work before the pain subsided; no longer the controlled testimony before the Industrial Commission; no longer the dividends from human misery.

The insurance companies will spend thousands

of dollars for the uplift of legislative comfort. It will be a battle.

Are you interested?

And so—we find the camel—in the tent of medicine.

What will the profession do to the Communist-backed Intern Council?

Could the profession, by working a little harder, forego the pleasure of interns for one year, two years or three years or until such time that the interns took up their labor for love of art rather than pecuniary gain?

Certainly! And the sooner we start, the better for everyone.

Can we help change the monopolistic, autocratic dividend forcing insurance carriers to temper commercialism with mercy?

Yes we can!

Talk to your patients, they will do the rest.

Can we save medicine from the misery, the desperation and the desire that socialized medicine always provides?

Yes we can!

Let the nation know through the news channels—the radio, the silver screen, the rostrum—of the true color and attributes of this camel of socialized medicine and the result is inevitable: The return of true medicine to the couches of the nation's ill.

Alliance Life Bldg.

DID NOT TAKE OFF HIS HAT

A salesman was driving along a country road one day when he saw a red-headed Negro child playing in front of a little shack sitting on the edge of a clearing. He had never seen a red-headed colored child before, so his curiosity was aroused. Stopping his car in front of the yard, he called out to the old colored mammy who was sitting on the porch:

"Is that your child?"

"Yassur, he is," answered the mammy.

"Well, tell me something," he went on, "how did he happen to get red-headed?"

"He was borned lak dat," replied mammy.

"I can't understand that," said the salesman. "You certainly don't have red hair. Is there any red hair back in your family?"

"Naw suh, not a bit," replied mammy.

"Well, how about the father of the child, is he red-headed?" the salesman persisted.

"Ah don' know dat, mister," answered the mammy. "You see, dat gentleman didn't take off his hat."

Miscellaneous

SULFANILAMIDE IN TREATMENT OF GONORRHEAL VULVOVAGINITIS

Samuel J. Hoffman, Maurice Schneider, Maurice L. Blatt and Russell D. Herrold, Chicago (*Journal A. M. A.*, May 7, 1938), used sulfanilamide in the treatment of gonorrheal vulvovaginitis in twenty-five children varying in age from 3 months to 10 years. Three of this group had chronic infections at the time treatment was instituted, one subacute and the remainder acute infections. No local treatment was used and sulfanilamide was administered orally in fruit juice to all the patients. During the first two days the daily dosage was three-fourths grain (0.05 Gm.) per pound of body weight in four equally divided doses at intervals of six hours. During the next five days the dosage was reduced to three-fourths of this amount, or nine-sixteenths grain (0.04 Gm.) per pound daily. During the second and third weeks the dosage was reduced to three-eighths grain (0.024 Gm.) per pound daily or one-half the initial dosage. At the end of a three weeks course of treatment a rest period of one week was given regardless of the results of smear examinations. All patients whose smears were positive at the end of this rest period were given a second course exactly like the first. A rest period was also given at the end of the second course of treatment, and for the majority of patients who were still infected at the end of the second rest period a third course of treatment was prescribed. A few patients were given a fourth course of treatment after the third rest period. Only seven patients were apparently cured during the first course of treatment, or under a period of twenty-one days (average 17.3 days). By apparent cure we mean a clinical disappearance of all signs of infection from the urethra, vagina, cervix and rectum, as well as negative smears from these areas. During the second course of treatment, nine additional patients were cured between the thirty-fifth and forty-ninth day of treatment, with an average of 42.9 days. Seven of the nine patients not cured were given a third course of treatment, and one of this group was cured during the third course, or in sixty-three days. Four of the six remaining patients not yet cured were given another course of treatment after the usual rest period, and only one of this group of four was cured by such additional treatment. It would seem then that patients who do not respond to two standard courses of treatment have gonococcal infections that are relatively resistant to therapy with sulfanilamide. All patients were kept in the hospital for two weeks after negative smears were obtained, and all those listed as cured had follow-up examinations from one to three months after discharge from the hospital. It was exceptional for patients to have a recurrence if they were clinically and microscopically normal for a period of two weeks after discontinuance of the drug. The children have tolerated sulfanilamide extremely well as compared to adults, in whom reports have indicated a high incidence of reactions.

NOISE AND ITS EFFECT ON HUMAN BEINGS: NOISE CONTROL AS A BY-PRODUCT OF AIR CONDITIONING

In their dissertation on noise and its effect on human beings, Carey P. McCord, Detroit; Edwin E. Teal, Ann Arbor, Mich., and William N. Witheridge, Detroit (*Journal A. M. A.*, May 7, 1938), conclude by saying that the American Medical Association's Committee on Air Conditioning recognizes that proper air conditioning is one factor tending to diminish the ill effects of noise of some types. The procurement of closed windows, doors and other sound barriers commonly associated with artificial climates in public buildings, office buildings, department stores, theaters and so on may eliminate as much as 75 per cent of the noises of extraneous origin. In industry, air conditioning offers little promise of protection against noise for workers employed near the origin of noise. Vibration in ranges below audibility has a prominent role in the production of injuries arbitrarily classed as noise diseases. Although inaudible vibrations may involve occupied areas that may be air conditioned, obviously no protection can be secured from such vibrations by air conditioning. The compilation of material making up this report presents extensive evidence that genuine injury is widespread as a result of noise action and that noise deafness is the chief of these dysfunctions in terms of both frequency and severity.

UNDULANT FEVER: ITS TREATMENT WITH SULFANILAMIDE

Brucella melitensis, originally known as *Micrococcus melitensis*, is pleomorphic, its morphology in part determined by the culture medium or the preparation used for its study. Morphologically it is considered variously by several authors on bacteriology to be a coccus, a bacillus or a coccobacillus. On this basis, with the effect of the drug in question established against certain other pathogenic bacterial forms, Robert L. Stern and Ken W. Blake, Los Angeles (*Journal A. M. A.*, May 7, 1938), working independently, gave sulfanilamide in therapeutic doses to each of three private patients suffering from clinically and serologically established undulant fever. Highly satisfactory and prompt results with clinical cure followed. The maximal dosage according to present standards appears to be necessary.

GRADUATE COURSE IN ELECTROCARDIOGRAPHY

Two Weeks—August 22 to September 3, 1938

An intensive two weeks' course in Electrocardiography for graduate physicians will be given at Michael Reese Hospital from August 22 to September 3, 1938, inclusive, by Dr. Louis N. Katz, Director of Cardiovascular Research. As group and individual instruction will be given, the course is open to both the beginning and advanced student in Electrocardiography.

There will be practice on several electrocardiographic machines and discussion of the principles of their construction and use. There will be sessions on inter-

pretations of electrocardiograms and practice with unknown records. Lectures on the principles involved in standard and chest leads will be given.

It is planned to individualize the course so that at the end of the period each student will be capable of taking and properly interpreting routine electrocardiograms. In order to accomplish this purpose the class will be limited in number. It is imperative, therefore, that reservations be made early.

Reservations may be made upon receipt of \$25.00, which will be applied on the tuition. A copy of the program will be sent on request.

For further information address:

The Medical Librarian, Michael Reese Hospital, 29th and Ellis Ave., Chicago, Ill.

AMERICAN CONGRESS OF PHYSICAL THERAPY

The 17th annual scientific and clinical session of the American Congress of Physical Therapy will be held cooperatively with the 22nd annual convention of the American Occupational Therapy Association, September 12, 13, 14 and 15, 1938, at the Palmer House, Chicago. Preceding these sessions, the Congress will conduct an intensive instruction seminar in physical therapy for physicians and technicians—September 7, 8, 9 and 10.

The convention proper will have numerous special program features, a variety of papers and addresses, clinical conferences, round table talks, and extensive scientific and technical exhibits.

The instruction seminar should prove of unusual interest to everyone interested in the fundamentals and in the newer advances in physical therapy. The faculty will be comprised of experienced teachers and clinicians; every subject in the physical therapy field will be covered. Information concerning the convention and the instruction seminar may be obtained by addressing: The American Congress of Physical Therapy, 30 North Michigan Avenue, Chicago.

POST-GRADUATE COURSES IN BERLIN

The Berlin Academy for Medical Postgraduate Study is holding the following international postgraduate courses in June and July, 1938:

1. Postgraduate course in the field of diseases of children, from June 20 to 25, mostly given by the Bessau-sche Universitäts-Kinderklinik (university clinic for children) of the Charité, Berlin. The course is arranged for physicians for children as well as for general practitioners. Fee: RM 50,—.

2. Postgraduate course in the field of urology, from June 27 to July 2. This course is not only of value for urologists but also especially for urologically practicing surgeons, physicians for internal diseases and gynaecologists. Fee: 60,— RM.

3. Postgraduate course in the field of diseases of the mouth and jaw, from June 27 to July 2. This course will mostly be given by the Universitäts-Kieferklinik (university clinic for diseases of the jaw) of the Charité (Prof. Axhausen) and will be highly in-

teresting for surgeons as well as dental surgeons. Fee: RM 70,—.

4. Postgraduate course in the field of neurosurgery, from July 4 to 9. The first neurosurgeons and neurologists of Berlin will give lectures. Fee: RM 70,—.

For further information and programs apply to the office of the Berliner Akademie für ärztliche Fortbildung, Berlin, W 7, Robert Koch-Platz 7 (Kaiserin Friedrich-Haus).

All courses will be held in German.

Foreign doctors and German doctors resident abroad are granted a reduction of fare of 60 per cent on the German Railways Company's lines, when the fare is paid in foreign currency. A foreign physician can reduce the cost of his stay considerably by utilizing the so-called "registered marks." It is advisable to arrange matters with a local bank before departure.

ACCIDENTS ON FARMS*

When a farmer buys an industrial product, he pays for the cost of the industrial injuries involved in the production of that particular object. When the farmer sells his products, he must receive as a part of his selling price the costs of the accidents which have occurred in connection with the raising and marketing of his product.

It is estimated that the annual cost of industrial agricultural accidents in California is \$10,000,000.

During the years 1932-1936, inclusive, there were 252 persons killed, and 45,095 employees injured in California agriculture.

It has been stated that in Kansas, in 1934, more than 50 per cent of the occupational deaths in the state occurred on the farms.

It is estimated that the farm fire losses in the United States are \$100,000,000 a year and that there are 3,500 lives lost in these fires.

Since the use of electricity, liquefied petroleum gases, farm machinery, and automotive vehicles, has become common on the farms, the deaths from these uses have increased enormously.

Ladders, hand tools, infections and falls from various causes are largely responsible for the great number of injuries and deaths in which machinery takes no part.

The agricultural industry in California has, for a number of years, reported to the Industrial Accident Commission a greater number of injuries to employees than any one other industrial group. These reports do not include the accidents that occur to the farmers or their families; they are not classed as employees.

There is no agency connected with the agricultural industry that can afford to omit accident prevention from its program. They should analyze the accidents as to their cause and effect, and then remove the causes. Every such organization should also stress the necessity for proper training in the care and handling of injuries and injured persons.

Agriculture, if it so desires, can make as good a record as the other industries have made.

*Reprinted from the Bulletin of the California Industrial Accident Commission.

SURGICAL OPERATIONS IN ILLINOIS

According to a release by the Department of Public Health, it appears that about half a million surgical operations are performed on human beings in Illinois annually. This estimate is based on a report from the U. S. Public Health Service, which shows that there were during a single year 65 such operations per 1,000 people among 8,758 families comprising 39,185 individuals who resided at the time of the study in 130 localities in 18 states. These families were visited periodically by nurses during a period of twelve months and a record made of all illnesses.

Tonsils and adenoids were responsible for considerably more operations than anything else, 18 per 1,000 people, against a rate of about 8 per 1,000 for the setting of bones and 6 per 1,000 for appendicitis, the next two most frequent causes. Then came the removal of tumors, about 4 per 1,000, and the lancing of boils, about 2 per 1,000.

If these rates hold good in Illinois there are about 140,000 operations annually for tonsils and adenoids, 60,000 for setting bones, 45,000 for appendicitis and 30,000 for tumors.

If these estimates hold any degree of accuracy they give a new and important emphasis to the life-saving importance of surgery. The number of deaths from appendicitis, for example, ranges from 1,000 to 1,200 per year in Illinois and some of these never go to operation. Thus for every fatality from appendicitis there are about 45 who recover from that disease as a result of surgical treatment. There are about 10,000 deaths per year from cancer in Illinois and 30,000 operations for tumor, suggesting a 3 to 1 chance of recovery from that serious disease when appropriate treatment is resorted to soon enough.

POSTOPERATIVE CORONARY ARTERY OCCLUSION

Arthur M. Master, Simon Dack and Harry L. Jaffe, New York (*Journal A. M. A.*, April 30, 1938), discuss the thirty-five proved attacks of coronary artery occlusion occurring after operation in the Mount Sinai Hospital during the years 1931 to 1937. Previous coronary artery disease was probably present in every case. Two-thirds of the patients were 60 years of age or older. Only four were under 50. Surgical shock was present in 60 per cent of the cases. Postoperative coronary artery occlusion presents a picture similar to pulmonary embolism, characterized by shock, dyspnea and cyanosis. Precordial pain is usually absent or is slight. Sixty-six per cent of the patients died, in eight of whom death was attributed directly to the occlusion; in the remainder it was associated with serious surgical complications. Occlusion occurred in the first three days after operation in half the cases. Coronary occlusion appears extremely rarely in patients in the medical wards. The postoperative occlusions comprised 5 per cent of the total number of attacks in the hospital. The possible factors associated with the operation leading to coronary occlusion include surgical shock attended by a diminution in blood volume and a drop in blood pressure,

tachycardia, dehydration and infection. In patients with coronary artery disease, operation may be followed by coronary occlusion. Therefore, patients over 45 years of age should be thoroughly examined, and when coronary sclerosis is present the question of surgical intervention and the choice of surgical procedure should be given due consideration.

RIBOFLAVIN: PHYSIOLOGY AND PATHOLOGY

In discussing the physiology and pathology of riboflavin A. G. Hogan, Columbia, Mo. (*Journal A. M. A.*, April 9, 1938) states that various physiologic roles have been ascribed to riboflavin, but the only one concerning which there is no dispute is that it has some function in the oxidation processes of the cell. Knowledge of these reactions is chiefly due to Warburg and Christian. A study of the properties of the yellow enzyme indicates that the necessity for including riboflavin in the diet is that it is an essential constituent of the yellow oxidation enzyme that cannot be synthesized by the animal cell. It is probable, then, that the vitamin activity of flavin is due to the fact that it forms an ester with phosphoric acid, and this ester combines with protein to form the yellow oxidation enzyme. Apparently, if no hemin substances are present, all of the cell respiration is accomplished by Warburg's yellow ferment. On the other hand, if iron compounds are present it may be that only a small part of cell respiration is due to this enzyme. The author further discusses riboflavin in tumor tissue, its storage and excretion, the non-toxicity of an overdosage of riboflavin, content of the eye, its deficiency and relation to cataract, the fact that its deficiency which is not the primary cause of either pellagra or blacktongue but perhaps a complicating one, riboflavin and pernicious anemia, the effect riboflavin and adrenal cortex extract have on growths in rats after it has been inhibited by iodoacetic acid poisoning, and the bearing of riboflavin in avian nutrition.

YELLOW BONE MARROW EXTRACTS IN GRANULOCYTOPENIA: PRELIMINARY REPORT

Up to the present time an extract from yellow bone marrow free of the large amount of fat that is present in the refined marrow has been administered to twenty patients with granulocytopenia. Such a concentrate was prepared by C. M. Marberg and H. O. Wiles, Chicago (*Journal A. M. A.*, Dec. 11, 1937), by extracting the unsaponifiable portion of the marrow and dissolving it in a bland oil for oral administration. The equivalent concentration of 2 Gm. of marrow per drop has been found quite satisfactory for clinical use. In all but seven of the twenty patients there has been a rise in the number of granulocytes, usually with a return to normal figures. In fact, if active infection persists during the period of treatment the granulocytes may rise to figures far above normal. Of the seven patients who did not give a satisfactory response, two were later found to have aplastic anemia; in four a differential

diagnosis was not made, and the last had diabetes and appendicitis in addition to the granulocytopenia. The rise in granulocytes usually begins within from twenty-four to thirty-six hours, as contrasted with the effect of pentnucleotide, which is not usually manifested in less than from four to five days. Flipse has obtained similar results in several cases.

SUCTION TEST FOR CAPILLARY RESISTANCE IN THROMBOCYTOPENIC PURPURA

R. H. Egerton Elliott, New York (*Journal A. M. A.*, April 9, 1938), points out that determinations of the capillary resistance by the suction method are performed as a matter of routine at each visit of all patients with purpura who attend the Spleen Clinic of the Presbyterian Hospital. In all, some thirty-five persons with purpura, not to mention numerous persons with various other types of blood dyscrasias, are being so observed. In each case the values for capillary resistance tends to parallel closely the bleeding tendency, low values being present in the active phases of the disease and higher, or normal, values in the inactive phases. This has been found to be true irrespective of the level of the platelet count. In other words, when as occasionally happens, the bleeding tendency is active in the presence of a normal platelet count or when the tendency is inactive in the presence of thrombocytopenia, the resistance values tend to parallel the former rather than the latter. After splenectomy the capillary resistance may be the first measurable entity to be quantitatively affected. In seven recent cases of so-called idiopathic thrombocytopenic purpura in which splenectomy was performed, the resistance value rose from 5 to 40 cm. of mercury within the first twenty-four hours after operation. Immediately after splenectomy and at the time resistance rose all clinical bleeding ceased. The elevation of the platelet count following operation may lag behind the rise in resistance.

INTERPRETATION OF EXCESSIVE GONADOTROPIC HORMONES EXCRETED IN URINE IN EARLY PREGNANCY

A. J. Kobak, Chicago, (*Journal A. M. A.*, April 9, 1938), cites a case that demonstrates the difficulty in diagnosis when, after the expulsion of a hydatid mole, an unexpected pregnancy intervenes. The diagnosis was obscured by the contraceptive precaution. Furthermore, the possibility of a pregnancy occurring within four weeks from the date of the curettage was unlikely. With the uterus growing rapidly for one week, the hemorrhage and the hormone observations, the diagnosis of uterine pregnancy became even more dubious. The patient was admitted to the Michael Reese Hospital, where the uterus was emptied by an abdominal hysterotomy. It contained a normal fetus and placenta about 10 weeks of age. The left ovary contained a normal corpus luteum of pregnancy. The fibroids were removed and the patient made an uneventful recovery. Microscopic examination of the placenta showed nothing abnormal. Two subsequent Friedman tests were

negative. When more negative reports are made, the diagnostic value of large quantities of gonadotropic hormones in the urine will be more limited. The clinical history and physical appearances should be given primary consideration before one concludes that chorionepithelioma or hydatidiform mole is present.

HATS OFF TO OUR DOCTORS

"Does anyone know if there exists any more a good old-fashioned doctor?" asks "A Patient." Most certainly I do! We have had more sickness during the last 15 months than during the previous 15 years. In each case our doctor knew what to do without "consulting books." "Friend and adviser?" Most assuredly! As much as the oldest friend of the family. "Confidence?" Well, we have told him things that we never would think of telling our dearest friends. As far as the preaching of money is concerned, we have never heard him say a word about it. In fact, he has always said. "Don't rush yourself." I know of cases where he has given his services free of charge, and he is no millionaire either.

But, if the doctor does mention money, is it not coming to him. Doctor's and dentists' bills usually are put off to the very last. "He can wait." How long would "Patient" be "patient" and work without getting paid for his work?

I say, "Hats off to our doctors." Are they not always willing to answer our distress signals, rain or shine? By coming in contact with all kinds of contagious diseases, do they not gladly risk their own lives just to help us? And then we criticize them!

MRS. JOHN WOLFF.

THE FATHER OF AMERICAN PSYCHIATRY

In that year Dr. Benjamin Rush joined the staff of physicians at Pennsylvania Hospital, beginning a thirty year period of service that was fraught with great significance to the mentally ill in America. He was the first American teacher to institute a comprehensive course of study in mental disease; he was the first American physician to attempt an original systematization of the subject. The theoretic structure that he erected was decidedly unsteady, as we shall see, but it marked a real beginning and an honest one. He wrote the first general treatise on psychiatry in America, and it is no mean tribute to his genius that it remained the only American work of its kind for seventy years after publication. He fully earned the title by which he was known to later generations—"The Father of American Psychiatry."—Deutsch, Albert: *The Mentally Ill of America*, New York, Doubleday, Doran & Co., Inc., 1937, p. 72.

Society Proceedings

KANKAKEE COUNTY

The April meeting of the Kankakee County Medical Society was held at the Kankakee State Hospital as guests of Dr. and Mrs. Morrow, members of the staff and their wives.

Dr. Norton G. Becker of the Kankakee State Hospital talked on the use of Metrazol in the treatment of psychoses and neuroses with presentation of cases.

Dr. Lewis J. Pollock, head of the Department of Nervous and Mental Diseases Northwestern University, talked on tumors of the brain.

Very truly yours,

CHARLES ALLISON.

Marriages

ROY O. HAWTHORNE to Miss Louise P. Bidwell, both of Kankakee, Ill., in February.

CLETUS T. KEARNEY, Gridley, Ill., to Miss Helen Garm of Beardstown, February 26.

Personals

Dr. Ralph R. Ferguson, ex-president of Illinois State Medical Society and chairman of the educational committee, after several months illness resumed practice, June 1.

Dr. Ferguson's numerous friends in the profession will be pleased to learn of his restoration to health.

The Stephenson County Medical Society was addressed, April 21, by Dr. John W. Ferrin, Chicago, on "Surgery of the Prostate."

The St. Clair County Medical Society was addressed in East St. Louis, May 5, by Dr. William J. Dieckmann, Chicago, on "Abnormal Labor."

Dr. William R. Cubbins, Chicago, discussed "Fractures of the Hip" before the Sangamon County Medical Society in Springfield, May 5.

Dr. John T. Gernon, Chicago, addressed the McDonough County Medical Society at Macomb, April 20, on "Medical and Surgical Consideration of Renal Calculi."

At a meeting of the Will-Grundy County Medical Society, April 20, Dr. G. Henry Mundt, Chicago, spoke on "Management of Chronic Nasal Infection."

At a meeting of the Madison County Medical Society, May 6, in Madison, Dr. Robinson Bosworth, East St. Louis, discussed "The Findings of Minimal Tuberculosis."

The Rock Island County Medical Society was addressed in Moline, April 12, by Drs. Channing W. Barrett, Chicago, on "Preservation and Restoration of the Pelvic Floor" and Dr. George D. Hauberg, Moline, "Management of the Diabetic Patient."

Dr. Brockway D. Roberts, Wayland, Iowa, has been appointed professor of hygiene and director of student health at Knox College, Galesburg. Dr. Roberts graduated at the University of Illinois College of Medicine, Chicago, in 1935.

Dr. Walter Schiller, pathologist at Jewish Memorial Hospital, New York, has been appointed chief of the pathology department at Cook County Hospital to succeed the late Dr. Richard H. Jaffé. Aged 50 and a native of Vienna, Dr. Schiller graduated at the University of Vienna in 1912. He has served as assistant pathologist of the Military Hospital, Vienna; resident pathologist of the Clinic of Internal Medicine, and for fifteen years as assistant to the Second Gynecologic Clinic and director of laboratories.

Dr. Frederick Rehm Schmidt gave a paper on "Diagnosis of the Commoner Skin Diseases" before the Madison County Medical Society, June 3.

Dr. Samuel M. Feinberg addressed the Clinton County Medical Society at Clinton, Iowa, May 5 on "Summer Allergy."

Dr. I. Harrison Tumpeer addressed the Maimonides Medical Society of Detroit, Michigan, at the Statler Hotel, May 3 on "Pediatric Adventures in Allergy."

Dr. Edward H. Ochsner presented two papers at the annual meeting of the Oklahoma State Medical Society in Muskogee, May 10 and 11.

Dr. Eric Oldberg spoke at the Manteno State Hospital before the Kankakee County Medical Society, May 12, on "The Relationship of Neurological Surgery to Psychiatry."

Dr. Julius H. Hess spoke before the Bureau of Maternal and Child Health, New Jersey State Department of Health, May 5, on "Progress in Child Health in the United States."

At the meeting of the 8th District Indiana Medical Society held at Muncie, May 12, Dr. Clarence F. G. Brown discussed the "Diagnosis and Medical Treatment of Gallbladder Disease," and Dr. John L. Lindquist presented a paper on "The Differential Diagnosis and Surgical Treatment of Gallbladder Disease."

Dr. Benj. H. Breakstone addressed the Illinois State Electric Medical Society at its convention, May 17, on "Increasing Indications for and Simplified Technique of Cesarean Section."

Dr. Paul H. Harmon, Chicago, and Dr. J. S. Speed, Memphis, Tennessee, addressed the Alexander County Medical Society in Cairo, April 29, on "Suppurative Arthritis of the Hip," with special reference to early diagnosis, location and treatment and on "Fractures About the Elbow Joint," respectively.

Dr. Daniel H. Levinthal addressed the Will-Grundy County Medical Society, Joliet, Illinois, at their final program meeting of the year, May 11, on "Reconstruction Surgery of Spastic Paralysis" and "Reconstruction Surgery of Poliomyelitis," with movies.

Dr. Paul H. Harmon, Chicago, addressed the Effingham County Medical Society at a dinner meeting, April 7, on "Review of Poliomyelitis in its relationship to the State Plan for the Care of Crippled Children."

Dr. Paul H. Harmon, Chicago, addressed the Morgan County Medical Society at Jacksonville, April 14, on "Recent Research on Poliomyelitis; the Treatment of Acute Poliomyelitis."

News Notes

—The exhibit window in the Marshall Field & Co. Annex is devoted to the subject of "Hobbies and Health" with suitable examples of the hobbies of members of the Chicago Medical Society.

—Courses to emphasize the importance of health will be added to public school curriculums, the newspapers report. The new courses will in the beginning be added to the program of about fifty of the 349 elementary schools. In the primary grades, regular teachers will provide training in personal cleanliness and give instruction in health habits. In the intermediate grades various causes of disease will be explained to the pupils. In the seventh and eighth grades they will receive instruction from the physical education teacher.

—The city medical society held a special meeting on syphilis in Peoria April 27; the speakers were Reuben L. Kahn, Sc.D., Ann Arbor, on "Interpreting Paradoxical Serum Reactions in Syphilis"; Dr. Albert E. Russell, Washington, D. C., "Syphilis in Industry," and Dr. David C. Elliott, Springfield, "Syphilis and Its Relation to Public Health." Dr. Herbert R.

Edwards, New York, discussed "Tuberculosis Case Finding" before the society May 3 and Dr. Maxim Pollak, Peoria, "Lung Cancer."

—The Rockefeller Foundation has given \$150,000 to the University of Chicago over a period of three years and extended its grant to the Chicago Institute for Psychoanalysis for a period of five years to support research in psychiatry. The gift to the university supplements the work of a gift of \$168,000 three years ago which financed the establishment of a twelve bed psychiatric unit in the university clinics, staffed by a group of five physicians. Dr. David Slight, professor of psychiatry, is in charge. In addition to the new grant to the Institute of Psychoanalysis, \$20,000 has been made available for institute fellowships to be awarded young psychiatrists who hold research or teaching posts in psychiatry at universities or other institutions. The institute was founded five years ago with Dr. Franz Alexander as director. The research program has covered the study of emotional factors in the causation of gastrointestinal disturbances, chronic high blood pressure, asthma and hay fever and on the therapy of such cases, the psychoanalytic technic being used.

—Dr. Louis N. Katz, staff member at Michael Reese hospital and professor of physiology at the University of Chicago, was elected president of the Chicago Society of Internal Medicine at the annual meeting May 24.

—Dr. L. C. Gatewood, Rush Medical College, was chosen vice-president and Dr. Clarence F. G. Brown, attending physician at St. Luke's hospital and a medical teacher at Northwestern University, was chosen secretary and treasurer for the fifth time. Members elected to the executive committee are Dr. Robert W. Keeton, head of the department of medicine at the University of Illinois; Dr. G. K. Fenn, professor of medicine at Northwestern University and staff member at St. Luke's hospital, and Dr. Walter L. Palmer, professor of medicine at the University of Chicago.

—Wilton M. Krogman, Ph.D., associate professor of physical anthropology and anatomy, Western Reserve University School of Medicine, Cleveland, has accepted a similar appointment at the University of Chicago, effective in September. According to the announcement Dr.

Krogman will have the opportunity of developing a laboratory of physical anthropology at the university. A native of Oak Park, Ill., Dr. Krogman is secretary for the United States of the International Congress of Anthropology and Ethnology. He was field director of the archeological survey of Illinois for the University of Chicago during the summers of 1927 to 1930.

—James Franck, Ph.D., since 1935 professor of physics at Johns Hopkins University, Baltimore, has been appointed professor of physical chemistry at the university, effective October 1. According to the New York Times, the appointment was made to focus fundamental studies of physical and chemical aspects of life processes basic to the study of disease, which the university has been conducting for some years. The primary objective of this cooperative research is to determine the normal processes of cell growth. Born in Hamburg fifty-five years ago, Dr. Franck received his degree of doctor of philosophy at the University of Berlin. He was awarded the Nobel prize in physics in 1925.

—The Rush Medical College of the University of Chicago will hold its alumni assembly at the college June 6-7. Clinics covering the specialties will be held at Presbyterian and Cook County hospitals and the Central Free Dispensary, and general discussions will be presented by the following:

Dr. Richard K. Gilchrist, Pathology of Cancer of the Rectum.

Dr. Adrien H. P. E. Verbrugghen, Treatment of Acute Brain Injury.

Dr. Ernest E. Irons, Etiology and Pathology of Aspiration Pneumonia.

Dr. George W. Hall, Relationship Between Mental and Surgical Symptoms.

Dr. Gladys R. H. Dick, Scarlet Fever Control.

Dr. William A. Thomas, Water Balance in Medicine and Surgery.

Drs. Willard O. Thompson and Norris J. Heckel, Use and Abuse of Hormone Therapy in Undescended Testicle and Hypogenitalism.

Dr. Edward D. Allen, Endometriosis.

Dr. Carl O. Rinder, Hypoglycemia.

Dr. Archibald L. Hoyne, Therapy of Acute Poliomyelitis.

Drs. Arno B. Luckhardt and Jay B. Carter, Ethylene Anesthesia.

Dr. Dean Lewis, Baltimore, Endocrinology of Surgery.

Dr. Albert H. Montgomery, When Not to Operate in Acute Appendicitis.

Dr. Sidney A. Portis, Clinical Significance of Cholecystography.

Dr. Lewis will also address the annual banquet at the Drake Hotel Tuesday evening; Dr. George W. Hall will be the toastmaster.

Deaths

JOHN FRANKLIN ANDERSON, Chicago; Northwestern University Medical School, Chicago, 1930; member of the Illinois State Medical Society; aged 45; died, March 19.

LYNN MOORE BARNES, Decatur, Ill.; Harvard University Medical School, Boston, 1900; aged 64; died, March 13, of chronic nephritis.

JULIUS H. FIEGENBAUM, Alton, Ill.; Bellevue Hospital Medical College, New York, 1885; formerly city health officer; aged 78; died, February 26, of cerebral hemorrhage.

ADIN HENRY FOSTER, Erie, Ill.; Keokuk (Iowa) Medical College, 1905; member of the Illinois State Medical Society; aged 72; died, March 3, in the Mercy Hospital, Davenport, Iowa, of myocarditis.

EZRA T. GOBLE, Earlville, Ill.; Rush Medical College, Chicago, 1874; an Affiliate Fellow of the American Medical Association; past president of the La Salle County Medical Society; for many years member and president of the school board; formerly mayor of Earlville and bank president; aged 87; died, February 23, of chronic myocarditis.

JOHN W. GREENMAN, Galesburg, Ill.; Keokuk (Iowa) Medical College, 1898; aged 63; died, February 22, in Clermont, Fla., of uremia, nephritis and cerebral hemorrhage.

NICHOLAS J. NYE, McHenry, Ill.; Memphis (Tenn.) Hospital Medical College, 1899; member of the Illinois State Medical Society; aged 66; died, February 16, in Miami, Fla., of coronary occlusion and arteriosclerosis.

ISAAC CECIL WALKER, Marion, Ill.; St. Louis College of Physicians and Surgeons, 1897; aged 67; died, February 26, of pulmonary tuberculosis.

EDWARD AUGUST WEISENHORN, Teutopolis, Ill.; St. Louis University School of Medicine, 1909; member of the Illinois State Medical Society; aged 55; on the staff of St. Anthony's Hospital, where he died, February 13, of pneumonia.

HARRY E. WILKINS, Petersburg, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1893; member of the Illinois State Medical Society; formerly mayor, county coroner and member of the local board of education; aged 72; died, February 22, of myocarditis.

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VACATIONS are too often a vacation from protective foods. For optimum benefits a vacation should furnish optimum nutrition as well as relaxation, yet actually this is the time when many persons go on a spree of refined carbohydrates. Pablum is a food that "goes good" on camping trips and at the same time supplies an abundance of calcium, phosphorus, iron, and vitamins B and G. It can be prepared in a minute, *without cooking*, as a breakfast dish or used as a flour to increase the mineral and vitamin values of staple recipes. Packed dry, Pablum is light to carry, requires no refrigeration. Here are some delicious, easy-to-fix Pablum dishes for vacation meals:

Pablum Breakfast Croquettes

Beat 3 eggs, season with salt, and add all the Pablum the eggs will hold (about 2 cupfuls). Form into flat cakes and fry in bacon fat or other fat until brown. Serve with syrup, honey or jelly.

Pablum Salmon Croquettes

Mix 1 cup salmon with 1 cup Pablum and combine with 3 beaten eggs. Season, shape into cakes, and fry until brown. Serve with ketchup.

Pablum Meat Patties

Mix 1 cup Pablum and 1½ cups meat (diced or ground ham, cooked beef or chicken), add 1 cup milk or water and a beaten egg. Season, form into patties, and fry in fat.

Pablum Marmalade Whip

Mix ⅔ cups Pablum, ¼ cup marmalade, and ¼ cup water. Fold in 4 egg whites beaten until stiff and add 3 tablespoons chopped nuts.

Pablum (Mead's Cereal thoroughly cooked) is a palatable cereal enriched with vitamin- and mineral-containing foods, consisting of wheatmeal (farina) oatmeal, cornmeal, wheat embryo, yeast, alfalfa leaf, beef bone, reduced iron, and sodium chloride. Samples and recipe booklet sent on request of physicians.

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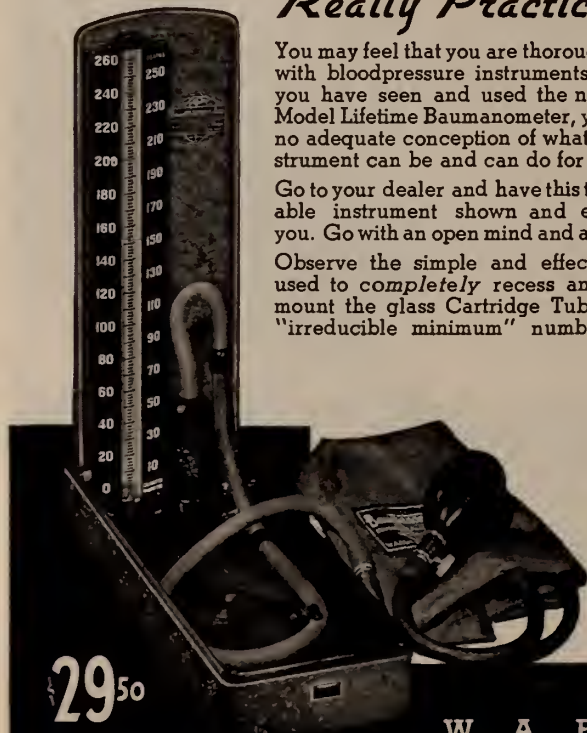
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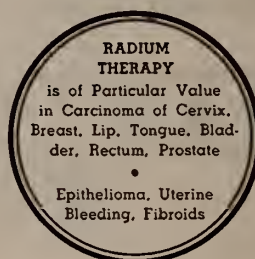
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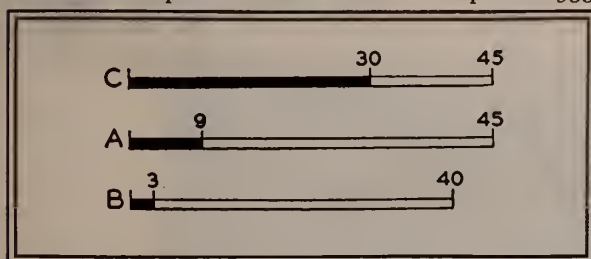


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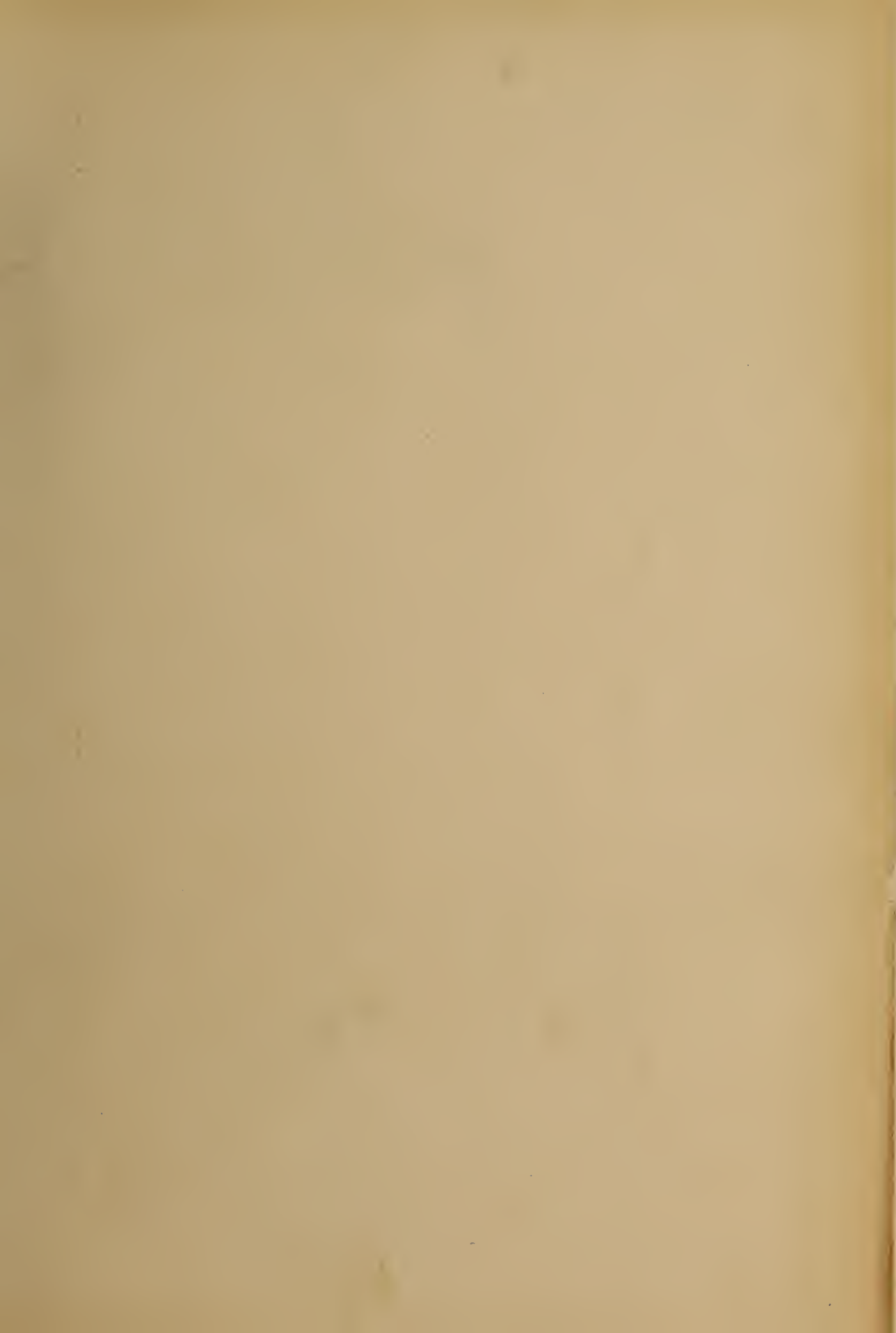
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